CONFIRMATION SOIL ASSESSMENT REPORT:

35 EAST TOOLE AVENUE
TUCSON, ARIZONA
85701-1209
ADEQ FACILITY ID # 0-007734
LUST CASES 2965.01-.02

PREPARED FOR:

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SEPTEMBER 26, 2007

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EXECUTIVE SUMMARY

On June 14, 2007, Engineering and Environmental Consultants, Inc. (EEC), under contract to City of Tucson Environmental Services (COT-ES), drilled confirmation soil borings and collected soil samples for laboratory analysis at 35 East Toole Avenue, Tucson, Arizona. The subsurface soils of the site were impacted by a release of gasoline from two former gasoline underground storage tanks (USTs) and associated dispensers that were removed from the property in 1993. The site, which was actively remediated by means of soil vapor extraction (SVE) under the Arizona Department of Environmental Quality (ADEQ) Voluntary Remediation Program (VRP), carries ADEQ facility identification number 0-007734 and has been assigned LUST case numbers 2965.01 and 2965.02. The facility was transferred to the VRP in January 2004, and carries VRP Site Code #505721-00.

Hydro Geo Chem, Inc., under contract to COT-ES, installed an SVE system at the site, which began operation on September 6, 2005. The SVE system was in continuous operation until July 2006, when EEC conducted drilling and soil sampling in proximity to the three release points associated with the site to determine the remedial progress. The results of that assessment indicated that the soils in proximity to two of the three release points had been reduced to below regulatory cleanup standards. However, a third area still contained contaminant concentrations above the remedial standards. Based on the findings of the 2006 assessment, COT-ES continued to operate the SVE system to remediate the soils in this area. EEC performed this follow-up subsurface soil investigation to assess the current condition of the soil in proximity to the single release point in question in order to determine if the remediation goals have been met and the LUST files associated with the site could be closed.

In accordance with the Scope of Work submitted to and approved by ADEQ and COT-ES, EEC drilled and sampled two exploratory boreholes in proximity to the release point. Laboratory analysis of the samples collected in this investigation resulted in no detection of any compound at concentrations above the regulatory standards.

This assessment, coupled with the July, 2006 assessment, indicates that subsurface soils at the fuel release points have been remediated to levels below the applicable cleanup standards. Based on the results of this investigation COT-ES requests a letter of No Further Action from ADEQ VRP.

1.0 INTRODUCTION AND PURPOSE

On June 14, 2007, Engineering and Environmental Consultants, Inc. (EEC), under contract to City of Tucson Environmental Services (COT-ES), drilled confirmation soil borings and collected soil samples at 35 East Toole Ave. in Tucson, Arizona. The purpose of this investigation was to determine if volatile organic compounds (VOCs) and petroleum hydrocarbon-impacted subsurface soils in the area of a suspected fuel spill had been remediated to levels below the applicable regulatory cleanup standards established for this site. As outlined in the work plan for this site (HGC, 2004), the applicable cleanup standards are the more stringent of the residential soil remediation levels (SRLs) and the groundwater protection levels (GPLs) for VOCs, including benzene, toluene, ethylbenzene, and xylenes (BTEX). According to the provisions outlined in R18-7-202(E), the site may be remediated under the 2007 SRLs if site characterization was completed before May 5, 2007, and remediation is completed before May 5, 2010. These two conditions are met for 35 East Toole Avenue, therefore, the 2007 SRLs will be used to support a request for No Further Action.

The areas of concern are due to releases of fuels from former underground storage tanks (USTs), product dispensers, and a suspected fuel spill. This work was completed as a follow-up to an initial confirmation soil sampling program completed at the site in July, 2006 (EEC, 2007). This report contains a brief history of the site, a site description, the scope of work performed, the laboratory reports, and conclusions.

2.0 SITE DESCRIPTION AND HISTORY

The subject site consists of a 13,000-square-foot commercial office building on a 17,358-square-foot parcel of land northwest of 7th Avenue between the alignments of Toole Ave and the Union Pacific Railroad right-of-way. The property, which has an assigned address of 35 East Toole Avenue, is further identified as Pima County Assessors Parcel 117-16-0130.

Two USTs were permitted at the site in 1979 and 1980 (Zenitech, 1994). The property was subsequently purchased by the Arizona Department of Transportation (ADOT) for use as right-of-way during freeway construction (SCS, 2002). The area that formerly held the USTs and dispenser island is at the southeast corner of the building within a

chainlink enclosure, as shown on the site map in Appendix 1 and in photographs in Appendix 2. ADOT had the tanks, dispenser island and associated piping removed in 1993. Releases were discovered beneath the former tank area, beneath the former dispenser island, and in a third area along the west wall of the building, identified as a "fuel spill area" (Zenitech, 1993).

The site, which carries facility number 0-007734, was assigned LUST case numbers 2965.01 and 2965.02 in 1993 by the Arizona Department of Environmental Quality (ADEQ). As part of redevelopment efforts in the downtown Tucson area, COT-ES applied for and received a cleanup grant for the site from the United States Environmental Protection Agency (USEPA) Brownfields Program in March 2004. The Brownfields Cleanup Grant identification is #BF 97975901-0. At the request of COT-ES, the site was transferred from the ADEQ LUST program to the Voluntary Remediation Program (VRP) in January 2004 and carries VRP Site Code # 505721-00.

COT-ES submitted a work plan and quality assurance project plan (QAPP) to ADEQ and USEPA in July 2004 to conduct a remedial investigation at the site (HGC, 2004). The work plan and QAPP were approved by ADEQ and USEPA in August 2004. Following the remedial investigation, a report was submitted to ADEQ and USEPA in March 2005 detailing the results of the investigation and proposing a soil vapor extraction (SVE) system to remediate the site to the applicable residential SRLs or GPLs (HGC, 2005). The design and operation of the SVE system was approved by ADEQ and USEPA in August 2005.

3.0 SVE SYSTEM INSTALLATION AND PERFORMANCE

Hydro Geo Chem, Inc., under contract to COT-ES, installed the SVE system, which began operation on September 6, 2005, to remediate petroleum-based contamination at the three previously identified release points. The SVE system has been in continuous operation since that time. The SVE system was operated under a general air quality permit issued by the Pima County Department of Environmental Quality (Permit No. 3185). Air samples were collected as required under the air quality permit, and to assess system progress and performance. Appendix 3A contains weekly field sheets to document system operation and performance. The tables in Appendix 3B show the analytical results of the inlet and outlet air monitoring for the SVE system since it began operation in 2005. The table and graph in Appendix 3C show the overall performance

(mass of contaminants removed) of the SVE system. As of June 7, 2007, a total of 2,785 pounds of BTEX had been removed from the soils beneath the site. Copies of the laboratory analytical data reports are in Appendix 3D. The SVE system was shut off on June 13, 2007 to conduct the confirmation soil sampling. Based on the results of the soil sampling, the system has not been restarted.

4.0 2006 CONFIRMATION SOIL ASSESSMENT

In July 2006, COT-ES contracted EEC, Inc. to perform drilling and soil sampling at the three release points to assess the remedial progress at the site. The tables in Appendix 4 include a summary of the 2006 laboratory results. Table 1 shows a comparison of 2006 laboratory data to historical data collected from the same general locations and depths. The laboratory analytical reports and boring log data were submitted to ADEQ and USEPA in February 2007 (EEC, 2007). The borehole location map in Appendix 1 shows the locations of the boreholes listed in the summary table. The 2006 assessment found that the contaminants in the subsurface soils at the former location of the UST pit and the former location of the dispensers had been reduced to concentrations below the more stringent regulatory limit of the ADEQ residential SRLs and GPLs. The third area, the area of a suspected fuel spill that is the subject of this assessment, showed a general reduction in contaminant concentrations, but some compounds at the 20 and 30-foot depths were still above the residential SRLs and/or GPLs. Based on the findings of the 2006 assessment (EEC, 2007), COT-ES continued to operate the SVE system to remediate the soils in the suspected fuel spill area.

5.0 2007 CONFIRMATION SAMPLING SCOPE OF WORK

The following scope of work was completed to reassess the subsurface soils in proximity to an area of the 35 East Toole Avenue LUST site impacted by a suspected fuel spill.

5.1 Project Set-up, Health and Safety, and Utility Location

Prior to initiating field work, EEC reviewed the approved QAPP (HGC, 2004) and other documents and background information on the subject site provided by COT-ES, including the 2005 Remedial Investigation Report prepared by Hydro Geo Chem, Inc. (HGC, 2005). Prior to mobilizing to the site to conduct drilling activities on June 14,

2007, EEC coordinated with Blue Stake Services of Arizona to have the public underground utilities marked. Some piping associated with the SVE system was removed to allow drill rig access prior to conducting operations.

EEC prepared a Health and Safety Plan for the project in accordance with 29 CFR 1910.120. On-site EEC and subcontract personnel participated in a safety meeting before conducting fieldwork. Upon completion of the safety meeting, the participants signed a Tailgate Safety Meeting Signature Sheet. A copy of the signed Tailgate Safety Meeting Signature Sheet is included as Appendix 5.

5.2 Drilling and Soil Sampling

EEC mobilized to the site on June 14, 2007 and used a truck-mounted Mobil B-61 hollow-stem auger drill rig to drill two exploratory boreholes (CB-4 and CB-5) in proximity to the suspected fuel spill area (Photographs 1 through 3, Appendix 2). Prior to drilling, the surface concrete was cored with a 10-inch coring bit by Penhall Company of Tucson, Arizona. The locations of the boreholes, and their proximity to the existing 2004 SVE wells (P1, 2, and 3), the 2006 borehole locations (CB-1 through CB-3), and the 1993 borehole locations (B1 through B5), are shown on the map in Appendix 1. The drilling subcontractor under contract with COT-ES for this project was Layne Christensen Company of Chandler, Arizona. Because drilling would stop above the perched groundwater table (estimated to be approximately 64 feet bls), well permits were not required.

Borehole CB-4 was drilled to 50 feet below the land surface (bls) and soil samples were collected from the 10-, 20-, 40-, and 50-foots depths. Because a large cobble or small boulder was encountered at the 30-foot depth of CB-4, it was not possible to collect a sample from 30 feet. EEC therefore added borehole CB-5 to the sampling program. CB-5 was drilled to a total depth of 30 feet in order to obtain a sample from that depth. As shown on the map in Appendix 1, both CB-4 and CB-5 were drilled within three feet of CB-2, the borehole drilled and sampled during the 2006 assessment. Soil samples were collected by lowering a stainless steel split-barrel soil sampler fitted with three brass sampling sleeves through the auger and driving it into the undisturbed soil at the base of the borehole with a 140-pound automatic drop hammer. The penetration resistance values (blow counts) for each sample were recorded on the boring logs (Appendix 6).

Immediately following the recovery of the split spoon samples from each sample interval, soil samples were collected for VOC analysis from the interior of the split spoon "shoe" (i.e. sample from near the bottom of sample interval) using Encore® Samplers. The VOC samples were collected by pushing an Encore® Sampler into the soil contained in the shoe to fill it with approximately 5 grams of soil. The Encore® Sampler was then sealed, placed on ice, and prepared for same day shipment to the laboratory. Samples were collected for TPH and PAH analysis by sealing the ends of the lower sample sleeve with Teflon® sheets, aluminum foil, and plastic slip caps sealed to the brass with non-contaminating tape. Immediately following sample preparation, the soil samples were labeled with a sample ID, the time and date, and the initials of the sampler and placed, in a plastic zip-lock bag, on ice in an ice chest cooled to approximately 4 degrees Celsius.

In addition to the above described sampling, one blind duplicate sample was collected as a quality control measure in accordance with the approved QAPP. The duplicate Encore (VOC) samples were collected from the sampler shoe using the same methodology described above. It was not possible to collect a true duplicate of the TPH samples since the lower sampling sleeve was used for the original sample, therefore, the middle sampling sleeves were prepared for duplicate TPH analysis, using the same methodology described for the original sample.

Soil in the middle and top brass sample sleeve was classified, following the Unified Soil Classification System field method. A portion of the soil sample from the middle sample sleeve was removed quickly and placed into a clean plastic bag for headspace analysis with a photo-ionization detector (PID). The PID was calibrated to manufacturer's specifications prior to use. The results of the headspace scan and the soil classifications were recorded on the boring log for each borehole (Appendix 6). Following drilling, the boreholes were backfilled with the drill cuttings and the concrete was patched with ready-to-mix concrete (Photograph 4, Appendix 2).

5.3 Decontamination

Sampling equipment was decontaminated by scrubbing with a stiff brush in Alconox detergent and rinsing twice in clean water between each sampling event. The hollow stem augers were steam cleaned before drilling operations were initiated. An equipment

blank was collected from the decontaminated sampling equipment at the end of the sampling day.

6.0 LABORATORY ANALYSES

The samples collected during this investigation were delivered under chain-of-custody, at the end of the sampling day, to Transwest Geochem, Inc., the City of Tucson's contract laboratory, for analysis for TPHs by ADHS analytical method 8015AZ and for VOCs by EPA Method 8260. In accordance with ADEQ LUST assessment guidelines, 2 samples, CB-4-10' and CB-5-30', were selected for analysis for polynuclear aromatic hydrocarbons (PAHs) by EPA analytical method 8310. As required in the guidelines, samples selected for PAH analysis were those from above and below 15 feet in depth that field observation (soil odor, staining, and PID readings) indicated were the most highly contaminated. An equipment blank was also analyzed for TPHs, VOCs, and PAHs as described above. The samples were analyzed with a standard laboratory turnaround time.

7.0 LABORATORY RESULTS

Table 1 in Appendix 4 summarizes the TPH, MTBE, and VOC laboratory data for samples collected in proximity to the suspected fuel spill area during the site characterization in 1993, during the installation of the SVE wells in 2004, during the 2006 soil assessment (EEC, 2007), and during this assessment. The results are arranged first by increasing depth, then by date. Tables 2 through 5 summarize all of the laboratory detections for the 2006 and 2007 sampling events.

For samples collected during this (2007) assessment, no compounds were reported by the laboratory at concentrations above the 2007 residential SRLs or GPLs, where such standards exist. The laboratory results for the equipment blank were non-detect for all of the contaminants of concern. The laboratory results for the duplicate sample were consistent with the results obtained for the original sample. Copies of the complete laboratory reports are included as Appendix 7.

8.0 DATA VERIFICATION

As stated in the 2004 QAPP (HGC, 2004), data requiring review and verification for 35 East Toole Avenue are the soil sample analyses required for establishment of remedial soil VOC and PAH levels and soil VOC and PAH data used to request site closure. The

COT-ES Project Manager performed a review and validation on 100% of the critical laboratory data collected during the June 2007 confirmation sample collection project. A data verification report form is provided in Appendix 8. There were no deficiencies noted in the data. All data collected in June 2007 support a request by COT-ES for site closure.

9.0 COMMUNITY INVOLVEMENT

COT-ES has held regular meetings with the Warehouse Arts Management Organization, the neighborhood association affiliated with the site, to provide updates on progress at the 35 East Toole Avenue property. In addition, COT-ES has kept a sign posted listing contact information for the project. The next meeting with the neighborhood association is scheduled for October 2007. The sign will remain in place until a letter of No Further Action is issued by ADEQ.

10.0 CONCLUSIONS

This assessment has documented that the SVE system, coupled with natural attenuation, has reduced the concentrations of contaminants in the subsurface soils of the site to levels below the cleanup standards established for the site by ADEQ. Based on the results of this assessment of the suspected fuel spill area, and on the 2006 site assessment (EEC, 2007), EEC believes that the closure criteria approved by ADEQ have been met. COT-ES requests a letter of No Further Action from ADEQ VRP to close this site.

11.0 REFERENCES CITED

The references listed below were cited in the text and used in the completions of this assessment:

- Engineering and Environmental Consultants, Inc. (EEC). 2007. *Confirmation Soil Sampling Report: 35 East Toole Avenue, Tucson, Arizona, 85701-1209, ADEQ Facility ID # 0-007734, LUST Cases 2965.01-.02.* Report Prepared for City of Tucson Environmental Services. February 9, 2007.

- Hydro Geo Chem, Inc. (HGC). 2004. *35 East Toole Avenue Tucson, Arizona, Remediation Workplan.* Prepared for United States Environmental Protection Agency-Region 9 and Arizona Department of Environmental Quality. July 7, 2004.

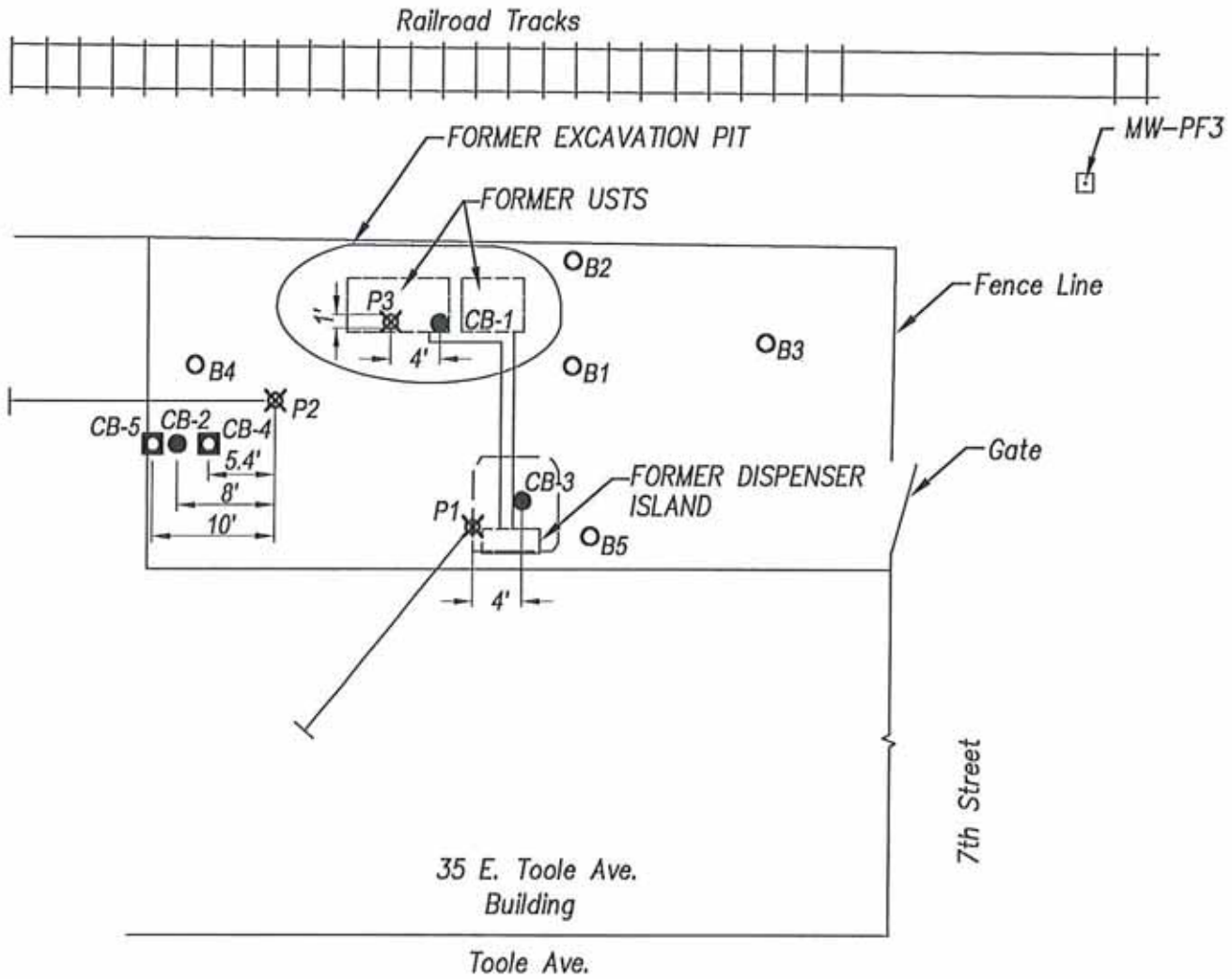
- Hydro Geo Chem, Inc. (HGC). 2005. *Remedial Investigation Report for 35 East Toole Avenue, City of Tucson, Pima County, Arizona.* Report prepared for City of Tucson Environmental Services. March 31, 2005. [Complete report in EEC's project file.]

- SCS, 2002. Limited Phase II Environmental Site Assessment, ADOT Parcel 10-525. 35 East Toole Avenue, Tucson, Arizona. May 29, 2002.

- Zenitech, 1994. Underground Storage Tank Removal and Phase II Investigation, ADOT Parcel No. 10-525. 35 East Toole Avenue, Tucson, Arizona. February 3, 1994

APPENDIX 1

CONFIRMATION SOIL BORING LOCATIONS



LEGEND

- ◘ 2007 Confirmation Soil Boring Location
- ● 2006 Confirmation Soil Boring Location
- O 1993 Soil Boring Location
- ⊠ 2004 Soil Vapor Extraction Well Location
- ⊢ Angeled Borehole Direction and Horizontal Distance

eec
Engineering and Environmental Consultants, Inc.
4625 E. FT. LOWELL RD.
TUCSON, ARIZONA 85712 520-321-4625

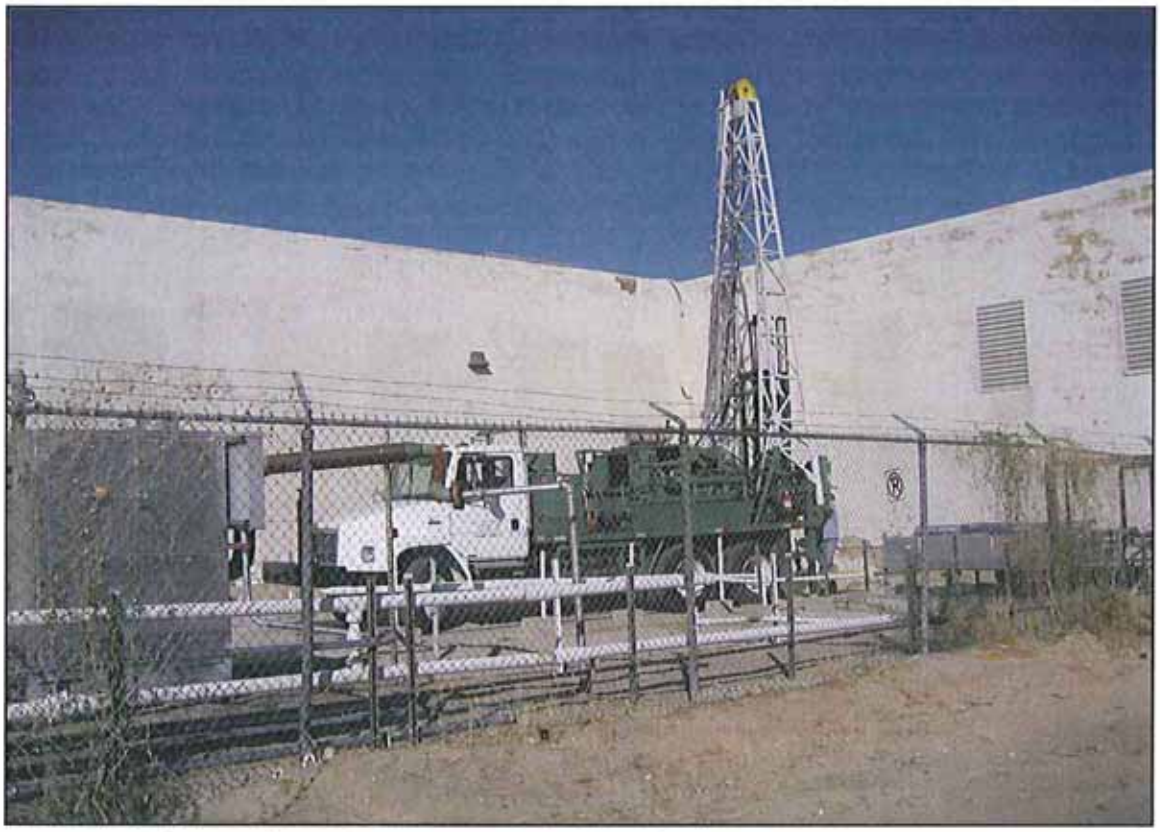
DESIGNED BY:	KP
DRAWN BY:	DIM
CHK'D BY:	KP
DATE:	08-2007
SCALE:	NTS

CONFIRMATION SOIL BORING LOCATIONS

JUNE 14, 2007

APPENDIX 2

SITE PHOTOGRAPHS



Photograph 1: SVE system and soil boring at 35 East Toole Avenue

Photograph 2: Borehole CB-4, in proximity to the suspected fuel spill location

Photograph 3: Typical drilling operations at the site

Photograph 4: Patched concrete (CB-4 is in the foreground, CB-5 is to the back; CB-2, the 2006 borehole, is the light gray circle between)

APPENDIX 3

SVE SYSTEM DATA AND TABLES

APPENDIX 3A

SVE SYSTEM OPERATIONAL DATA SHEETS

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 9.8.05

Technician and Company: GF VERDAD

GENERAL SYSTEM DATA:

Gas Meter (cf): 0045000

Electric Meter (kW-hr): 00026

Peak (kW):

SVE SYSTEM DATA:

System Run Time (hrs): 11.0

@ (time): 1024

Temperature (°F): Hi Temp 1444

Thermal: —

Vacuum (inches H_2O): 26

Total Flow (cfm): 128

Opacity of Stack Emissions: CLEAR.

Corrective Action Taken: —

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
INF	138	2.5 " Hg	1.3	95.5	33
EFF			1.3		
P-1	60	0.5 VAC (in Hg)	2.7	~~98.5~~ 92.7	~~51~~ 32
P-2	67	1.5 in Hg VAC	2.1	92.1	34
P-3	50	2.5 in Hg	2.0	94.2	34

COMMENTS (maintenance required, analytical samples taken and method, etc.):

INF SUMA collected @ 0915 ID: TOOLE - INF - 9805 TO15.
INF (PAH) on @ 0930 RUN UNTIL 11:10 TOOLE - INF - 090805 PAH
EFF SUMA @ 0940 - TOOLE - EFF - 090805 ~~PAH~~ TO15
EFF on @ 0942 - 1122 TOOLE - EFF 090805 PAH
~~EFF~~ P-3 SUMA @ 0950 - TOOLE - P3 - 090805 - TO15
P-3 (PAH) on @ 1000 - 1140 TOOLE - P3 - 090805 - PAH

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 09-13-05

Technician and Company:

GENERAL SYSTEM DATA:

Gas Meter (cf): 0108,500

Electric Meter (kW-hr): 128

SVE SYSTEM DATA:

System Run Time (hrs): 38.5

@ (time):

Temperature (°F): Hi Temp 1440

Thermal:

Vacuum (inches H_2O): 21" H_2O

Total Flow (cfm):

Opacity of Stack Emissions: Clear

Corrective Action Taken: Restore sample

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent					
Effluent					
P-1	44.1	1.5" Hg		85.5	
P-2	52.3	1" Hg		86.1	
P-3	41.1	2" Hg		87.5	

COMMENTS (maintenance required, analytical samples taken and method, etc.):

Effluent sample collected 090805 - No sample, System shut down
Restore Effluent Sample 091305 1011 System restarted 0800

Packer pressure at P-3=

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 9.15.05

Technician and Company: GF VERDAD

GENERAL SYSTEM DATA:

Gas Meter (cf): 35A000

Electric Meter (kW-hr): 00396

Peak (kW): —

SVE SYSTEM DATA:

System Run Time (hrs): 111.8

@ (time): 1005

Temperature (°F): Hi Temp 1456

Thermal: —

Vacuum (inches H_2O): 28

Total Flow (cfm): 103

Opacity of Stack Emissions: CLEAR

Corrective Action Taken: NONE

	Flow Rate (cfm)	Vacuum or Pressure Hg (in ~~H_2O or psi~~)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
INF	170	2.5	NM	87.9	17.3
P-1	60	2	NM	87.1	14.7
P-2	67	2.5	NM	89.4	12.1
P-3	56	2.5	NM	89.9	15.0

COMMENTS (maintenance required, analytical samples taken and method, etc.):

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 9/22/05

Technician and Company: MFW VERDAD
MC COTES

GENERAL SYSTEM DATA:

Gas Meter (cf): 1931

Electric Meter (kW-hr): ~~68~~ 1058

SVE SYSTEM DATA:

System Run Time (hrs): 279.8

@ (time): 1005

Temperature (°F): Hi Temp 1457

Thermal:

Vacuum (inches H_2O): 28

Total Flow (cfm): 185

Opacity of Stack Emissions: Clear

Corrective Action Taken: NA

	Flow Rate (cfm) S	Vacuum or Pressure (in ~~H_2O or psi~~) 11 Hg	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	123			90.5	30
Effluent					
P-1	67	1.5	66.5/395	88.8	
P-2	68	2	103/1350	89.6	31.7
P-3	58	3	110/590	~~39~~ MFW 91	39

COMMENTS (maintenance required, analytical samples taken and method, etc.):

Sampled:
SUMA - INF & EFF
Tedlar - INF, EFF, & INFBD (before dilution)

Packer pressure at P-3= 25 lbs
min 30 lbs

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 9-30-05

Technician and Company: WFW Verdad

Post-it® Fax Note 7671	Date 10/5/05	# of pages ▶ 1
To Molly Collins	From Verdad	
Co./Dept.	Co.	
Phone #	Phone #	
Fax #	Fax #	

GENERAL SYSTEM DATA:

Gas Meter (cf): 2875000

Electric Meter (kW-hr): 2036

SVE SYSTEM DATA:

System Run Time (hrs): 447.0

@ (time): 1430

Temperature (°F): Hi Temp 1450

Thermal:

Vacuum (inches H_20): 40

Total Flow (cfm): 178

Opacity of Stack Emissions: Clear

Corrective Action Taken: NA

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	227	3" Hg	—	93.9	26.9
Effluent					
P-1	89	30		98.4	21.2
P-2	90	32		92.4	23.5
P-3	98	34		94.5	24.1

COMMENTS (maintenance required, analytical samples taken and method, etc.):

Restarted system earlier

Packer pressure at P-3= 30

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 10/7/05

Technician and Company: WFW Verdad

GENERAL SYSTEM DATA:

Gas Meter (cf): 2249

Electric Meter (kW-hr): 2446

SVE SYSTEM DATA:

System Run Time (hrs): 610.4

@ (time): 0922

Temperature (°F): Hi Temp 1445

Thermal:

Vacuum (inches H_2O): 42

Total Flow (cfm): 348

Opacity of Stack Emissions: Clear

Corrective Action Taken:

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	301	1" Hg	~~238~~	87.0	31.4
Effluent	N/A	NA	NA	NA	NA
P-1	79.5	30.5"	238	85.7	31.6
P-2	85	31"	319	87.8	32.4
P-3	80.5	31"	182	90.1	30.9

COMMENTS (maintenance required, analytical samples taken and method, etc.):

Toole-PDIN @0930
Toole-IN @ 0935
Toole-EFF @ 0940

Packer pressure at P-3= 27

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 10.13.05

Technician and Company: GF VERDAD

GENERAL SYSTEM DATA:

Gas Meter (cf): 2500000

Electric Meter (kW-hr): 2826

SVE SYSTEM DATA:

System Run Time (hrs): 693.6

@ (time): 0855

Temperature (°F): Hi Temp 1438

Thermal: —

Vacuum (inches H_2O): 58

Total Flow (cfm): 305

Opacity of Stack Emissions: CLEAR

Corrective Action Taken: —

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	305	2.5" Hg	NM	83.5	15.9
Effluent	—	—		—	—
P-1	105	44		83.6	14.1
P-2	110	42		86.2	15.6
P-3	95	46		87.2	14.9

COMMENTS (maintenance required, analytical samples taken and method, etc.):

WHEN MATT ARRIVED @ 0800, SYSTEM OFF. LABORIOUS RESTART.

Packer pressure at P-3= 35 PSI

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 10/19/05

Technician and Company: MIH, GF

GENERAL SYSTEM DATA:

Gas Meter (cf): 3,132,000

Electric Meter (kW-hr): 03405

SVE SYSTEM DATA:

System Run Time (hrs): 817.2

@ (time): 0700

Temperature (°F): Hi Temp 1446

Thermal: —

Vacuum (inches H_2O): 42

Total Flow (cfm): 260

Opacity of Stack Emissions: CLEAR

Corrective Action Taken: NA

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	260	2.5	235	70.1	41.1
Effluent			35	—	
P-1	74	34	193	73.1	44.9
P-2	103	34	282	71.4	46.0
P-3	98	34	232	72.0	41.0

Influent ~~PD~~ Dilution 240

COMMENTS (maintenance required, analytical samples taken and method, etc.):

Samples: Toole - PD Pre-dilution @ 0800
Toole - IN After dilution 0755
Toole - EFF @0805

Samples taken to WRONG lab

Packer pressure at P-3= 40 PSI

Resampled 10/20

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 10/20/05

Technician and Company: MFW/VerSAC

GENERAL SYSTEM DATA:

Gas Meter (cf): 3244

Electric Meter (kW-hr): 3525

SVE SYSTEM DATA:

System Run Time (hrs): 842.5

@ (time): 0806

Temperature (°F): Hi Temp 1454

Thermal: ✓

Vacuum (inches H_2O): 46

Total Flow (cfm): 239*

Opacity of Stack Emissions: 0

Corrective Action Taken: NA

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	239	2" Hg	373	76	35.5
Effluent					
P-1	70.5	-31.3	–	77.4	37.7
P-2	77.5	-32.1	–	79.2	31.6
P-3	80.5	-32.4	–	83.1	28.4

COMMENTS (maintenance required, analytical samples taken and method, etc.):

*line measurement. No flow data on system. Called M.B.

Toole-Eff (effluent) @ 0815

Toole-AD (After dilution) @ 0820

Toole IN (influent) @ 0825

Packer pressure at P-3=

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 10/26/05

Technician and Company: GE VERDAD

GENERAL SYSTEM DATA:

Gas Meter (cf): 4,919,000

Electric Meter (kW-hr): 4206

SVE SYSTEM DATA:

System Run Time (hrs): 985.3

@ (time): 0655

Temperature (°F): Hi Temp 1456

Thermal: —

Vacuum (inches H_2O): 42

Total Flow (cfm): 245

Opacity of Stack Emissions: CLEAR

Corrective Action Taken: NONE

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	245	42	NM	67.2	41.7
Effluent	—	—		—	—
P-1	103.0	34		64.8	44.2
P-2	75.1	34		63.4	45.4
P-3	68	34		64.7	43.9

COMMENTS (maintenance required, analytical samples taken and method, etc.):

Packer pressure at P-3= 35

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 11/2/05

Technician and Company: GF, VERDAD

GENERAL SYSTEM DATA:

Gas Meter (cf): 4724 000

Electric Meter (kW-hr): 05000

SVE SYSTEM DATA:

System Run Time (hrs): 1154.0

@ (time): 0730

Temperature (°F): Hi Temp 1450

Thermal: —

Vacuum (inches H_20): 42

Total Flow (cfm): 230

Opacity of Stack Emissions: CLEAR

Corrective Action Taken: NA

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	230	2 (in Hg)	151	67.0	25.8
Effluent	—	—	9.7	—	—
P-1	89	32 (in H_2O)	-1.3	72.8	17.4
P-2	78	32 "	-2.5	74.6	16.0
P-3	70	32 "	9.8	74.7	15.9
INFLUENT (PD)		—	380	—	—

COMMENTS (maintenance required, analytical samples taken and method, etc.):

			Transwest
collect TEDLAR:	Toole INF	0815	418.1, 8015
	Toole PD	0810	" "
	Toole EFF	0800	" "

Packer pressure at P-3= 33

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 11/9/05

Technician and Company: GE VERDAD

GENERAL SYSTEM DATA:

Gas Meter (cf): 5546000

Electric Meter (kW-hr): 5786

SVE SYSTEM DATA:

System Run Time (hrs): 1321.2

@ (time): 0655

Temperature (°F): Hi Temp 1451

Thermal: —

Vacuum (inches H_2O): 42

Total Flow (cfm): 230

Opacity of Stack Emissions: CLEAR

Corrective Action Taken: NONE

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	230	42	—	64	24
Effluent			—	~~66~~	~~25~~
P-1	80	32	—	66	25
P-2	80	32	—	67	23
P-3	85	32		69	20

COMMENTS (maintenance required, analytical samples taken and method, etc.):

Packer pressure at P-3= 32

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 11/16/05

Technician and Company: M. WALLACE / NERLAD

GENERAL SYSTEM DATA:

Gas Meter (cf): 6423000

Electric Meter (kW-hr): 6590

SVE SYSTEM DATA:

System Run Time (hrs): 1490.8

@ (time): 0830

Temperature (°F): Hi Temp 1445

Thermal: ——

Vacuum (inches H_2O): AZ

Total Flow (cfm): 230

Opacity of Stack Emissions: CLEAR

Corrective Action Taken: NONE

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	230	5 in Hg	364	85	17%
Effluent					
P-1	87	30 in H2O	79.8	86	13
P-2	81	30 "	244	80	12
P-3	77	30	340	82.5	14

COMMENTS (maintenance required, analytical samples taken and method, etc.):

CHART RECORDER DOES NOT WORK

collect TEDLAR BAG SAMPLES P-3 @ 0835

Toole-INF @ 0840

Toole-PP @ 0845

Toole-EFF @ 0850

Packer pressure at P-3= 35

Post-it® Fax Note 7671	Date 11/16/05 # of pages ▸ 1
To Molly Collins	From GENO
Co./Dept.	Co.
Phone #	Phone #
Fax #	Fax #

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SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 11/23/05

Technician and Company: GF / VERDAD

GENERAL SYSTEM DATA:

Gas Meter (cf): 7,244,000

Electric Meter (kW-hr): 7396

SVE SYSTEM DATA:

System Run Time (hrs): 1659.0

@ (time): 08415

Temperature (°F): Hi Temp 1453

Thermal: —

Vacuum (inches H_2O): .42

Total Flow (cfm): 230

Opacity of Stack Emissions: CLEAR

Corrective Action Taken: NONE

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	230	42	—	63.1	15.8
Effluent	—	—	—	—	—
P-1	83	30	—	64.7	14.9
P-2	88	30	—	65.2	14.8
P-3	66	30	—	67.4	13.4

COMMENTS (maintenance required, analytical samples taken and method, etc.):

Packer pressure at P-3= 35

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 12/1/05

Technician and Company: MFW/Verdad

GENERAL SYSTEM DATA:

Gas Meter (cf): 8212

Electric Meter (kW-hr): 8383

SVE SYSTEM DATA:

System Run Time (hrs): 1854.1

@ (time): 0930

Temperature (°F): Hi Temp 1455

Thermal:

Vacuum (inches H_2O): 58

Total Flow (cfm): 293

Opacity of Stack Emissions: OK

Corrective Action Taken:

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	293		2700	79.3	15.0
Effluent	—	—	1.4	—	—
P-1	113	~~40~~ 36	~~125~~ 248*	81.5	14.0
P-2	97.9	40	~~37~~ 320*	81.0	13.9
P-3	106	42	322	80.6	13.5

COMMENTS (maintenance required, analytical samples taken and method, etc.):

Postdilution sample @ 0940
P-3 sample @ 0945
Chart recorder non-operational / No flow data
Oil leak from blower, will change oil Monday

Packer pressure at P-3=

* Re-sample w/ PID

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 12/8/05

Technician and Company: MFW / Verchel

GENERAL SYSTEM DATA:

Gas Meter (cf): 9080

Electric Meter (kW-hr): 9335

SVE SYSTEM DATA:

System Run Time (hrs): 2021.0

@ (time): 1040

Temperature (°F): Hi Temp 1442

Thermal: 1452

Vacuum (inches H_2O): 58

Total Flow (cfm): 235

Opacity of Stack Emissions: Clear

Corrective Action Taken: NA

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	235	58	280	71.7	8.4
Effluent	235	—	1.6	—	—
P-1	108	38.5	181	66.2	9.5
P-2	89.5	33	304	69.6	~~65.7~~ 9.7
P-3	86.5	40.5	287	66.0	9.3

COMMENTS (maintenance required, analytical samples taken and method, etc.):

Changed oil in blower & greased blower & motor

Packer pressure at P-3=

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 12/13/05

Technician and Company: MFW / Verchad

GENERAL SYSTEM DATA:

Gas Meter (cf): 9474

Electric Meter (kW-hr): 9098

SVE SYSTEM DATA:

System Run Time (hrs): 2125

@ (time): 1342

Temperature (°F): Hi Temp 1440

Thermal: 1453

Vacuum (inches H_2O): 50"

Total Flow (cfm): 267

Opacity of Stack Emissions: NA

Corrective Action Taken: NA

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	267 *	50" H_2O	–	103.5 *	30.1 *
Effluent		~~37~~	–		
P-1	108.0	37	–	73.5	21.1
P-2	105.0	38	–	74.7	22.1
P-3	7.1	0	0	75.8	20.6

COMMENTS (maintenance required, analytical samples taken and method, etc.):

* Positive pressure side of blower

IN 251 cfm 69.2 °F 20.8 RH

Injection pipeline 6.0 cfm 70.1 °F 26.4% RH

Packer pressure at P-3= No Packer

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 12/15/05

Technician and Company: MFW/Verdad

GENERAL SYSTEM DATA:

Gas Meter (cf): 9682

Electric Meter (kW-hr): 10145

SVE SYSTEM DATA:

System Run Time (hrs): 2172.1

@ (time): 1225

Temperature (°F): Hi Temp 1440

Thermal: 1454

Vacuum (inches H_2O): 50

Total Flow (cfm): 286 *

Opacity of Stack Emissions: NA

Corrective Action Taken: None

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	235	-5.5"	~~1.8~~ 271	71.0	13.5
Effluent	8.6	—	1.8	—	—
P-1	110.0	36	264	68.5	15.7
P-2	106.0	36	303	67.5	17.0
P-3	7.90	—	NA	67.5	21.4

P-3 Injection

COMMENTS (maintenance required, analytical samples taken and method, etc.):

* measurement taken Post-dilution

* Sample & parameter measurements were collected @ seperate times due to Labs need to ship samples.

Samples taken @ Effluent 0850 Effluent Post Dilution 0855 Effluent 0900

Packer pressure at P-3= No Packer

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 12/23/05

Technician and Company: MFW/Verdad

GENERAL SYSTEM DATA:

Gas Meter (cf): 0402

Electric Meter (kW-hr): 11160

SVE SYSTEM DATA:

System Run Time (hrs): 12361.6

@ (time): 1043

Temperature (°F): Hi Temp 1432

Thermal: 1450

Vacuum (inches H_2O): 56

Total Flow (cfm): 208

Opacity of Stack Emissions: —

Corrective Action Taken: —

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	208	56"	*	115	25.8
Effluent	See P-3		2.6		
P-1	113	40	*	86.2	8.8
P-2	109	40	*	86.4	9.7
P-3	11.4	NA		82.5	20.6

COMMENTS (maintenance required, analytical samples taken and method, etc.):

PID not operating correctly.

Re-installed packer

Packer pressure at P-3= 35psi

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 12/29/05

Technician and Company: MFW/Verdad

GENERAL SYSTEM DATA:

Gas Meter (cf): ~~1031~~ 1038

Electric Meter (kW-hr): 11895

SVE SYSTEM DATA:

System Run Time (hrs): 2504.5

@ (time): 0940

Temperature (°F): Hi Temp 1444

Thermal: 1450

Vacuum (inches H_2O): 56

Total Flow (cfm): 216

Opacity of Stack Emissions: NA

Corrective Action Taken: NA

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	216	56	177	118.6 *	23.9
Effluent	—	—	0	—	—
P-1	116	39	144	69.3	13.1
P-2	123	39	151	70.2	19.0
P-3	8.35	—	—	74.7	23.6

COMMENTS (maintenance required, analytical samples taken and method, etc.):

Sampled Influent @ 0942

* Process Air

Changed chart on chart recorder. Pen not recording

Packer pressure at P-3= 35

12/23/05 @1045
MFW onsite

Dilution valve closed
hrs 2362
temp 1440
Φ 58" H_2O
Replaced packer in P-3
inflated to 35 psi
Chart recorder operation but not complete in printing. May be thermal pen

12/29/05 MFW onsite 2500.5 hrs
0930 Performed site parameter recordings & effluent sampling
Chart pen did not record last half of week. Installed new chart & reset chart function seems to be printing now

1/3/06 Bill T. on site 350pm
checked system - ok

1/5/06 @1250 MFW onsite
hrs 2675
weekly monitoring -
Changed chart paper, seems to be working slightly better.
System operating fine. Pumped out condensate tank Wed 1/4/06

1/9/06 @ 0110 GF onsite
hrs: 2766.2
CHART RECORDER NOT RECORDING.
SYSTEM OPERATING NORMALLY.

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 1/5/06

Technician and Company: MFW/Verdad

GENERAL SYSTEM DATA:

Gas Meter (cf): 1563

Electric Meter (kW-hr): ~~12~~ 12769

SVE SYSTEM DATA:

System Run Time (hrs): 2675.7

@ (time): 1250

Temperature (°F): Hi Temp 1443

Thermal: 1451

Vacuum (inches H_2O): 52

Total Flow (cfm): 213

Opacity of Stack Emissions: NA

Corrective Action Taken: NA

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	213	52	167	122.2	21.2
Effluent	—	—	0.2	—	—
P-1	119	36	174	83.4	7.2
P-2	118	38	188	82.0	6.1
P-3	8.60	—	—	84.7	10.5

COMMENTS (maintenance required, analytical samples taken and method, etc.):

Packer pressure at P-3= 35

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 1/11/06

Technician and Company: GF, VERDAD

GENERAL SYSTEM DATA:

Gas Meter (cf): 2073,000

Electric Meter (kW-hr): 13531

SVE SYSTEM DATA:

System Run Time (hrs): 2814.5

@ (time): 0730

Temperature (°F): Hi Temp 1438

Thermal: ——

Vacuum (inches H_2O): 48

Total Flow (cfm): 260

Opacity of Stack Emissions: CLEAR

Corrective Action Taken: NONE

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	260	2.5 in Hg	85000	93.2	34.1
Effluent	—	—	2.2	—	—
P-1	130	38	31.1	50.8	90.0
P-2	103	38	148	49.1	64.0
P-3 (INJECTION)	26	PRESSURE.	—	42.1	25.2

COMMENTS (maintenance required, analytical samples taken and method, etc.):

Collect INFLUENT TEDLAR SAMPLE
TOOLE-IN @ 0705

Packer pressure at P-3=

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 1/18/06

Technician and Company: GE, VERDAD

GENERAL SYSTEM DATA:

Gas Meter (cf): 2694000

Electric Meter (kW-hr): 15057

SVE SYSTEM DATA:

System Run Time (hrs): 2983.1

@ (time): 0800

Temperature (°F): Hi Temp 1423

Thermal: —

Vacuum (inches H_2O): 44

Total Flow (cfm):

Opacity of Stack Emissions: CLEAR

Corrective Action Taken: NA

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	191	2 (in Hg)	9154	86.8	48.3
Effluent	—	—	5.5	—	—
P-1	92	34	17.3	50.0	12.8
P-2	95	34	1033	49.5	12.4
P-3	25.3	PRESSURE	—	51.5	11.7

COMMENTS (maintenance required, analytical samples taken and method, etc.):

NO SPIN, NO PEN MOVEMENT, NO RECORDING ON CHART RECORDER

Packer pressure at P-3= 28

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 1/25/06

Technician and Company: GE VERDAD

GENERAL SYSTEM DATA:

Gas Meter (cf): 3400000

Electric Meter (kW-hr): 16802

SVE SYSTEM DATA:

System Run Time (hrs): 3150.8

@ (time): 0750

Temperature (°F): Hi Temp 1449

Thermal: —

Vacuum (inches H_2O): 74

Total Flow (cfm): 218

Opacity of Stack Emissions: CLEAR

Corrective Action Taken: NONE

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	218	74	194	115	27.5
Effluent	—	—	0.6	—	—
P-1	90	54	53.8	58.2	32.6
P-2	112	54	68.3	59.5	30.6
P-3	27.3	PRESSURE	—	65.0	32.0

COMMENTS (maintenance required, analytical samples taken and method, etc.):

Collect IN + EFF TEDLARS

Packer pressure at P-3= 28

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 2/2/06

Technician and Company: GF VERDAD

GENERAL SYSTEM DATA:

Gas Meter (cf): 4,303,000

Electric Meter (kW-hr): 19008

SVE SYSTEM DATA:

System Run Time (hrs): 3349.7

@ (time): 1500

Temperature (°F): Hi Temp 1454

Thermal: —

Vacuum (inches H_2O): 76

Total Flow (cfm): 240

Opacity of Stack Emissions: Clear

Corrective Action Taken: NA

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	240	—	201	119	21.1
Effluent	—	—	0.1	—	—
P-1	116	50 in H_2O	54.2	77.9	10.5
P-2	120	52 (in H_2O)	48.6	78.1	10.8
P-3	22.3	pressure	—	79.6	4.0

COMMENTS (maintenance required, analytical samples taken and method, etc.):

Packer pressure at P-3= 28

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 2/8/06

Technician and Company: MFW/Verdad

GENERAL SYSTEM DATA:

Gas Meter (cf): 4934

Electric Meter (kW-hr): 20523.7

SVE SYSTEM DATA:

System Run Time (hrs): 3487

@ (time): 0852

Temperature (°F): Hi Temp 1435

Thermal: 1446

Vacuum (inches H_2O): 78

Total Flow (cfm): 287

Opacity of Stack Emissions: NA

Corrective Action Taken: —

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	287	78		107.4	27.6
Effluent					
P-1	130	48		79.2	2.3
P-2	124	48		78.7	2.4
P-3	26.5	—		79.2	2.6

COMMENTS (maintenance required, analytical samples taken and method, etc.):

Influent samples collected @ 0850

PID not functioning

Packer pressure at P-3= Inflated to 35psi

TOOLE

2/15/05 0850 WTW
Sampled Influent/Influent Post dilution & Effluent. Collected wellfield parameters. Unit Chart recorder & flow display still non-functioning

12/16/05 800 BT ON SITE
Unit on 56" 1450°F 2 well on
closed Dilution Valve -
Opened BypASS to Maintain 56" H_2O.
Checking chart Recorder Air flow "Input 2".
found External 250Ω Resistor connected - Removed
found polarity Reversed + - changed. Signal NO working. But maxed out, found Holes in Tubing and water in Air flow Transmitter. Will Replace Tubing Later.
Called Solleco Repair to Advise - ok
found chart Mounting plate warped - pinching chart
(CONT)

ADDED ADDITIONAL SCREWS To Hold Mounting plate flat. Chart Rotating - ok
Unit on 56" H_2O 1450°F
Left @ 11AM.

12/19/05 9AM BT ON SITE
Chart Good, Changed paper
checked System, ok
12/20/05 930AM BT ON SITE
System, ok
Shutdown to Inspect cond. Tank (oil present).
Mist pads, ok
Qty. of oil was only A couple of teaspoons (estimate)
Sealed Lid,
Restart System @ 1030AM
Left @ 1045AM

12/22/05 1030AM BT ON SITE
Checked Unit, ok
Left @ 1045

2005 12/[illegible] 12/15 [illegible]

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 2.15.06

Technician and Company: GF VERDAD

GENERAL SYSTEM DATA:

Gas Meter (cf): 5,732,000

Electric Meter (kW-hr): 22415.

SVE SYSTEM DATA:

System Run Time (hrs): 3660

@ (time): 1400

Temperature (°F): Hi Temp 1450

Thermal: —

Vacuum (inches H_2O): 74

Total Flow (cfm):

Opacity of Stack Emissions: CLEAR

Corrective Action Taken: NONE

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	234		PID NOT WORKING	126	18.1
Effluent	—	—		—	—
P-1	118			85.4	4.8
P-2	87			85.3	5.0
P-3	23.9			83.6	6.1

COMMENTS (maintenance required, analytical samples taken and method, etc.):

CHART RECORDER STILL NOT WORKING

Packer pressure at P-3= 28 PSI

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 2/24/06

Technician and Company: MFW Verdad

GENERAL SYSTEM DATA:

Gas Meter (cf): 6713

Electric Meter (kW-hr): 24731

SVE SYSTEM DATA:

System Run Time (hrs): 3872.3

@ (time): 0932

Temperature (°F): Hi Temp 1441

Thermal: 1450

Vacuum (inches H_2O): 76

Total Flow (cfm): 313

Opacity of Stack Emissions: NA

Corrective Action Taken:

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	313	76	—	127.9	25
Effluent	~~[illegible]~~				
P-1	164	46	~~[illegible]~~ —	75.1	8.8
P-2	170	43	—	79.6	10.0
P-3	26.9	—	—	67.9	11.8

COMMENTS (maintenance required, analytical samples taken and method, etc.):

Packer pressure at P-3= 35psi

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 3.2.06

Technician and Company: GENO VERDAD

GENERAL SYSTEM DATA:

Gas Meter (cf): 7338000

Electric Meter (kW-hr): 26166

SVE SYSTEM DATA:

System Run Time (hrs): 4019.5

@ (time): 1245

Temperature (°F): Hi Temp 1455

Thermal: ——

Vacuum (inches H_2O): 50

Total Flow (cfm): 264

Opacity of Stack Emissions: CLEAR

Corrective Action Taken: NONE

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	264	50	NOT MEASURED	131	24.8
Effluent					
P-1	155	35		81.0	9.2
P-2	141	32		84.0	10.6
P-3	23.2	PRESSURE		93.0	11.9

COMMENTS (maintenance required, analytical samples taken and method, etc.):

CHART RECORDER STILL NOT WORKING

Packer pressure at P-3= 30 psi

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 3.6.06

Technician and Company: GENO VERDAD

GENERAL SYSTEM DATA:

Gas Meter (cf): 7688000

Electric Meter (kW-hr): 26961

SVE SYSTEM DATA:

System Run Time (hrs): 4110

@ (time): 0730

Temperature (°F): Hi Temp 1452

Thermal: —

Vacuum (inches H_2O): 52

Total Flow (cfm): 290

Opacity of Stack Emissions: CLEAR

Corrective Action Taken: NONE

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	290	52	NOT MEASURED	128	25.1
Effluent					
P-1	150	35		78.0	10.1
P-2	145	32		81.1	9.7
P-3	24.1	PRESSURE		94.2	11.2

COMMENTS (maintenance required, analytical samples taken and method, etc.):

CHART RECORDER STILL NOT WORKING

Sample P1

P2

INF

Packer pressure at P-3= 30 PSI

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 3.8.06

Technician and Company: GF VERDAD

GENERAL SYSTEM DATA:

Gas Meter (cf): 7874000

Electric Meter (kW-hr): 273783

SVE SYSTEM DATA:

System Run Time (hrs): 4158

@ (time): 0730

Temperature (°F): Hi Temp 1439

Thermal: —

Vacuum (inches H_2O): 52

Total Flow (cfm): 278

Opacity of Stack Emissions: CLEAR

Corrective Action Taken: NONE

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	278	52	NOT MEASURED	129	25.1
Effluent	—	—		—	—
P-1	162	34		82.0	9.8
P-2	152	32		83.9	10.7
P-3	24.1	PRESSURE		92.1	11.5

COMMENTS (maintenance required, analytical samples taken and method, etc.):

CHART RECORDER STILL NOT WORKING

Packer pressure at P-3= 30 PSI

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 3.15.06

Technician and Company: GF VERDAD

GENERAL SYSTEM DATA:

Gas Meter (cf): 8482000

Electric Meter (kW-hr): 28815

SVE SYSTEM DATA:

System Run Time (hrs): 4314

@ (time): 1200

Temperature (°F): Hi Temp 1453

Thermal: —

Vacuum (inches H_2O): 48

Total Flow (cfm): 215

Opacity of Stack Emissions: CLEAR

Corrective Action Taken: NONE

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	215	48	NM	115.7	31.6
Effluent					
P-1	134	30	NM	76.1	16.3
P-2	129	30	NM	76.4	16.5
P-3	26.1	PRESSURE	NM	69.5	20.3

COMMENTS (maintenance required, analytical samples taken and method, etc.):

Sample PAHs P-1, P-2 For 120 MINUTES @ 2 l/min

Packer pressure at P-3= 28

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 3.23.06

Technician and Company: GE VERDAD

GENERAL SYSTEM DATA:

Gas Meter (cf): 0199,800

Electric Meter (kW-hr): 30412

SVE SYSTEM DATA:

System Run Time (hrs): 4501

@ (time): 0830

Temperature (°F): Hi Temp 1437

Thermal: —

Vacuum (inches H_2O): 46

Total Flow (cfm):

Opacity of Stack Emissions: CLEAR

Corrective Action Taken: NONE

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	212	46	—	114.4	34.7
Effluent	—	—	—	—	—
P-1	110	30	—	72.2	18.6
P-2	120	28	—	72.3	19.3
P-3	26.2	PRESSURE	—	66.4	22.1

COMMENTS (maintenance required, analytical samples taken and method, etc.):

Packer pressure at P-3= 30

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 3.30.06

Technician and Company: AF VERDAD

GENERAL SYSTEM DATA:

Gas Meter (cf): 9816000

Electric Meter (kW-hr): 31811

SVE SYSTEM DATA:

System Run Time (hrs): 4667

@ (time): 0730

Temperature (°F): Hi Temp 1451

Thermal:

Vacuum (inches H_20): 46

Total Flow (cfm):

Opacity of Stack Emissions: CLEAR

Corrective Action Taken: NONE

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	200	46	NM	101.8	30.4
Effluent	—	—	—	—	—
P-1	104	32	NM	71.7	40.1
P-2	126	30	NM	71.9	37.1
P-3	27.1	PRESSURE	NM	73.5	34.5

COMMENTS (maintenance required, analytical samples taken and method, etc.):

SAMPLED INF + EFF

Packer pressure at P-3= 32

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 4.5.06

Technician and Company: GF VERDAD

GENERAL SYSTEM DATA:

Gas Meter (cf): 0376,000

Electric Meter (kW-hr): 33069

SVE SYSTEM DATA:

System Run Time (hrs): 4817

@ (time): 1330

Temperature (°F): Hi Temp 1440

Thermal: —

Vacuum (inches H_20): 43

Total Flow (cfm):

Opacity of Stack Emissions: CLEAR

Corrective Action Taken: NONE

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	212	43	NM	114.1	24.8
Effluent					
P-1	123	33 in H2O		88.0	12.1
P-2	128	30 " "		90.1	12.1
P-3	23.1	P		91.6	12.8

COMMENTS (maintenance required, analytical samples taken and method, etc.):

Packer pressure at P-3= 30

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 4.11.06

Technician and Company: GF, VERDAD

GENERAL SYSTEM DATA:

Gas Meter (cf): 0010000

Electric Meter (kW-hr): 34279

SVE SYSTEM DATA:

System Run Time (hrs): 496.3

@ (time): 1300

Temperature (°F): Hi Temp 145.9

Thermal: —

Vacuum (inches H_2O): 43

Total Flow (cfm):

Opacity of Stack Emissions: CLEAR

Corrective Action Taken: NONE

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	191	43	NM	124.1	19.1
Effluent					
P-1	127	32		92.6	8.3
P-2	129	30		93.0	7.6
P-3	22.0	PRESSURE		101.3	6.0

COMMENTS (maintenance required, analytical samples taken and method, etc.):

No samples collected.

Packer pressure at P-3= 29 PSI

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 4.18.06

Technician and Company: GF VERDAD

GENERAL SYSTEM DATA:

Gas Meter (cf): 1,537,000

Electric Meter (kW-hr): 35,643

SVE SYSTEM DATA:

System Run Time (hrs): 15130

@ (time): 1400

Temperature (°F): Hi Temp 1460

Thermal: —

Vacuum (inches H_2O): 46

Total Flow (cfm): 172

Opacity of Stack Emissions: CLEAR

Corrective Action Taken: NONE

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	172	46	NM	121.6	22.5
Effluent	—				
P-1	126	34		97.4	5.5
P-2	129	30		99.5	6.0
P-3	22.1	Pressure		104.8	4.4

COMMENTS (maintenance required, analytical samples taken and method, etc.):

No samples collected

Packer pressure at P-3= 30 psi

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 4.27.06

Technician and Company: GF VERDAD

GENERAL SYSTEM DATA:

Gas Meter (cf): 2,312,000

Electric Meter (kW-hr): 37440

SVE SYSTEM DATA:

System Run Time (hrs): 5339

@ (time): 0730

Temperature (°F): Hi Temp 146.1

Thermal: —

Vacuum (inches H_2O): 44

Total Flow (cfm):

Opacity of Stack Emissions: CLEAR

Corrective Action Taken: NONE

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	204	44	NM	111.0	29.7
Effluent	—				
P-1	107			76.7	23.3
P-2	122	23		77.5	23.0
P-3	28.0	34		81.1	21.5

COMMENTS (maintenance required, analytical samples taken and method, etc.):

collected TEDLARS FROM INF + EFF for 8015 + BTEX

Packer pressure at P-3= 28 PSI

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 5/2/06

Technician and Company: GF, VERDAD

GENERAL SYSTEM DATA:

Gas Meter (cf): 2602000

Electric Meter (kW-hr): 38336

SVE SYSTEM DATA:

System Run Time (hrs): 5464

@ (time): 1230

Temperature (°F): Hi Temp 1448

Thermal: —

Vacuum (inches H_2O): 30

Total Flow (cfm): ,

Opacity of Stack Emissions: CLEAR

Corrective Action Taken: NONE

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	136	30	NM	130.1	17.6
Effluent					
P-1	93.5	20		98.0	5.1
P-2	82.0	20		97.8	5.8
P-3	20.9	PRESSURE	✓	97.5	6.0

COMMENTS (maintenance required, analytical samples taken and method, etc.):

NO SAMPLES COLLECTED

Packer pressure at P-3= 28

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 5.10.06

Technician and Company: GF, VERDAD

GENERAL SYSTEM DATA:

Gas Meter (cf): 3279000

Electric Meter (kW-hr): 39664

SVE SYSTEM DATA:

System Run Time (hrs): 5652

@ (time): 0800

Temperature (°F): Hi Temp 1489

Thermal: —

Vacuum (inches H_2O): 28

Total Flow (cfm):

Opacity of Stack Emissions: CLEAR

Corrective Action Taken: NONE

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	142	28	NM	112.0	27.8
Effluent					
P-1	73.3	24		80.1	12.1
P-2	91.0	18		83.2	10.4
P-3	23.7	PRESSURE		84.7	10.7

COMMENTS (maintenance required, analytical samples taken and method, etc.):

NO SAMPLES COLLECTED

Packer pressure at P-3= 30

GD

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 5.17.06

Technician and Company: GF, VERDAD

GENERAL SYSTEM DATA:

Gas Meter (cf): 3,701,000

Electric Meter (kW-hr): 40,850

SVE SYSTEM DATA:

System Run Time (hrs): 5821

@ (time): 0930

Temperature (°F): Hi Temp 1419

Thermal: —

Vacuum (inches H_2O): 30

Total Flow (cfm): 127

Opacity of Stack Emissions: CLEAR

Corrective Action Taken: NO

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	127	30	NM	117	24.5
Effluent					
P-1	80	24		94	13.9
P-2	99	24		94	17.6
P-3	22	PRESSURE		93	18.4

COMMENTS (maintenance required, analytical samples taken and method, etc.):

No samples collected

Packer pressure at P-3= 29 PSI

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 5.24.06

Technician and Company: GE VERDAD

GENERAL SYSTEM DATA:

Gas Meter (cf): 4211000

Electric Meter (kW-hr): 41360

SVE SYSTEM DATA:

System Run Time (hrs): 5958

@ (time): 0715

Temperature (°F): Hi Temp 1481

Thermal: —

Vacuum (inches H_2O): 28

Total Flow (cfm): 118

Opacity of Stack Emissions: CLEAR

Corrective Action Taken: NA

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	118	28	NM	109.9	31.7
Effluent	—	—	—	—	
P-1	86	22	—	85.8	11.0
P-2	85	22	—	84.0	12.8
P-3	9	PRESSURE	—	84.7	15.9

COMMENTS (maintenance required, analytical samples taken and method, etc.):

COLLECT 2 TEDLAR SAMPLES IN & EFF

0720 0710

Packer pressure at P-3= 20 INFLATED TO 30 PSI

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 5.31.06

Technician and Company: VERDADIGE

GENERAL SYSTEM DATA:

Gas Meter (cf): 4724000

Electric Meter (kW-hr): 42527

SVE SYSTEM DATA:

System Run Time (hrs): 6131

@ (time): 1200

Temperature (°F): Hi Temp 1420

Thermal: ——

Vacuum (inches H_20): 26

Total Flow (cfm): 120

Opacity of Stack Emissions: CLEAR

Corrective Action Taken: NONE

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	120	.	NM	120.1	11.1
Effluent	—				
P-1	85	24		102.0	4.2
P-2	90	22		101.9	4.1
P-3	20	PRESSURE		103.6	3.7

COMMENTS (maintenance required, analytical samples taken and method, etc.):

- CHANGE OIL + LUBE COMPRESSOR
- NO SAMPLES COLLECTED

Packer pressure at P-3= 29

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 6.9.06

Technician and Company: GF VERDAD

GENERAL SYSTEM DATA:

Gas Meter (cf): 5275000

Electric Meter (kW-hr): 43920

SVE SYSTEM DATA:

System Run Time (hrs): 6303

@ (time): 0730

Temperature (°F): Hi Temp 1436

Thermal: —

Vacuum (inches H_2O): 28

Total Flow (cfm):

Opacity of Stack Emissions: CLEAR

Corrective Action Taken: NONE

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	122		NM	125.4	21.6
Effluent					
P-1	80.5	24		99.0	12.4
P-2	103	20 VAC		97.4	15.5
P-3	22			96.9	16.5

COMMENTS (maintenance required, analytical samples taken and method, etc.):

No samples collected. SYSTEM OK

Packer pressure at P-3= 30 PSI

24 hr

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 6.15.06

Technician and Company: GF VERIFIED

GENERAL SYSTEM DATA:

Gas Meter (cf): 5721000

Electric Meter (kW-hr): 449155

SVE SYSTEM DATA:

System Run Time (hrs): 6449

@ (time): 0730

Temperature (°F): Hi Temp 1458

Thermal: —

Vacuum (inches H_2O): .44

Total Flow (cfm): 230

Opacity of Stack Emissions: CLEAR

Corrective Action Taken: NONE

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	230/200	44	247 ppm	87.2	12.6
Effluent	—	—	MAX	—	—
P-1	110	34	282	98.6	9.0
P-2	125	32	300	98.5	8.4
P-3	23	PRESSURE		98.6	8.8

COMMENTS (maintenance required, analytical samples taken and method, etc.):

Packer pressure at P-3= 34 PSI

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 62206

Technician and Company: GF VERDAD

GENERAL SYSTEM DATA:

Gas Meter (cf): 6346000

Electric Meter (kW-hr): 46381

SVE SYSTEM DATA:

System Run Time (hrs): 6622

@ (time): 1330

Temperature (°F): Hi Temp 1465

Thermal: —

Vacuum (inches H_2O): 40

Total Flow (cfm): 240

Opacity of Stack Emissions: Clear

Corrective Action Taken: NONE

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
* Influent	240	40	296	94.5	21.4
Effluent	?	~~?~~	2200	~~44.4~~	~~29.5~~
P-1	122	32	314	94.5	20.8
P-2	126	30	250	94.5	21.2
P-3	22.8	PRESSURE	0.5	94.9	21.4

COMMENTS (maintenance required, analytical samples taken and method, etc.):

* NORTH HORIZONTAL RUN ON 3" PVC

Packer pressure at P-3= 29

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 6.29.06

Technician and Company: GE VERDAD

GENERAL SYSTEM DATA:

Gas Meter (cf): 6703000

Electric Meter (kW-hr): 47428

SVE SYSTEM DATA:

System Run Time (hrs): 6749

@ (time): 0930

Temperature (°F): Hi Temp 1450

Thermal: —

Vacuum (inches H_2O): 42

Total Flow (cfm): 230

Opacity of Stack Emissions: CLEAR

Corrective Action Taken: NONE

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	230		694	98.3	25.5
Effluent	—	—	>9999	—	—
P-1	111	30	420	98.2	24.0
P-2	98	30	1030	94.6	26.0
P-3	26	pressure	0.5	95.1	21.2

COMMENTS (maintenance required, analytical samples taken and method, etc.):

SAMPLE IN + EFF, MONTHLY TEDLAR

Packer pressure at P-3= 21

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 7/6/06

Technician and Company: GE VERDAD

GENERAL SYSTEM DATA:

Gas Meter (cf): 7366000

Electric Meter (kW-hr): 48632

SVE SYSTEM DATA:

System Run Time (hrs): 6907

@ (time): 0830

Temperature (°F): Hi Temp 1444

Thermal: —

Vacuum (inches H_2O): 42

Total Flow (cfm): 230

Opacity of Stack Emissions: CLEAR

Corrective Action Taken: NONE

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	230	42	132	82.2	31.8
Effluent	—	—	>9999	—	—
P-1	96	30	240	84.1	49.4
P-2	125	30	79999	85.5	48.1
P-3	24.7	PRESSURE	0.5	86.5	47.6

COMMENTS (maintenance required, analytical samples taken and method, etc.):

USE TEDLAR BAG FOR PID READING ON P-1, P-2, INFLUENT

Packer pressure at P-3= 29 PSI

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 7/14/06

Technician and Company: WFW / Verchad

GENERAL SYSTEM DATA:

Gas Meter (cf): 8038

Electric Meter (kW-hr): 50172

SVE SYSTEM DATA:

System Run Time (hrs): 7098.3

@ (time): 0716

Temperature (°F): Hi Temp 1473

Thermal: 1445

Vacuum (inches H_2O): 42

Total Flow (cfm):

Opacity of Stack Emissions: Good

Corrective Action Taken:

	Flow Rate (cfm) System / Influent	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	193/259	Positive ↑	177.6	137	24.3
Effluent	—	—	3.4ppm	—	—
P-1	115	30	165	85.5	31.2
P-2	135	29	104.8	87.5	35.1
P-3	23.8	—		97.9	35.9

COMMENTS (maintenance required, analytical samples taken and method, etc.):

FID background = 0.3ppm

Packer pressure at P-3= 34

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 7.20.06

Technician and Company: GF VERDAD

GENERAL SYSTEM DATA:

Gas Meter (cf): 8574000

Electric Meter (kW-hr): 91403

SVE SYSTEM DATA:

System Run Time (hrs): 7250

@ (time): 1500

Temperature (°F): Hi Temp 1475

Thermal: —

Vacuum (inches H_2O): 40

Total Flow (cfm): 240

Opacity of Stack Emissions: CLEAR

Corrective Action Taken: NONE

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	240	40		100.6	18.3
Effluent	—	—	79999	—	—
P-1	110	30	329	102.9	18.4
P-2	121	30	562	102.5	18.5
P-3	26	pressure	0.5	103.2	18.5

COMMENTS (maintenance required, analytical samples taken and method, etc.):

Packer pressure at P-3= 32 psi

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 7/26/06

Technician and Company: MFW/Vekrad

GENERAL SYSTEM DATA:

Gas Meter (cf): 9055

Electric Meter (kW-hr): 52515

SVE SYSTEM DATA:

System Run Time (hrs): 7387.8

@ (time): 0845

Temperature (°F): Hi Temp 143.8

Thermal: 147

Vacuum (inches H_2O): 42

Total Flow (cfm):

Opacity of Stack Emissions: ✓

Corrective Action Taken:

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	* 220	42	~~288~~ 296	89.6	38.0
Effluent			3.4		
P-1	103	31	431	92	35.7
P-2	117	30	262	94.1	35.7
P-3	20	—	—	95.8	34.2

COMMENTS (maintenance required, analytical samples taken and method, etc.):

Sampled P-1 & P-2
0850 0855

* Pipeline

Background PID 3.9 ppm

Packer pressure at P-3= 35

Shut system down @ 1345

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 8/7/06

Technician and Company: GF, VERDAD

GENERAL SYSTEM DATA:

Gas Meter (cf): 9,347,000

Electric Meter (kW-hr): 52851

SVE SYSTEM DATA:

System Run Time (hrs): 7460

@ (time): 0725

Temperature (°F): Hi Temp 1453

Thermal: —

Vacuum (inches H_20): 36

Total Flow (cfm): 260

Opacity of Stack Emissions: Clear

Corrective Action Taken: —

Sample		Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
	Influent	260	2" Hg	493	91.2	43.1
	Effluent	—	—	>9999	—	—
0710	P-1	78	25	2735	90.9	42.4
0715	P-2	95	25	62	89.7	43.6
0720	P-3	93	NO VAC gauge	42 /?	87.6	45.5

/31 CFM
75 CFM /99

COMMENTS (maintenance required, analytical samples taken and method, etc.):

RECONFIGURED TO INJECT @ P-3 @ 1235. 99 CFM per Milly. PRESSURE GUAGE STILL DOES NOT REGISTER

~~Packer pressure at P-3=~~

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 8.16.06

Technician and Company: GIF, VERDAD

GENERAL SYSTEM DATA:

Gas Meter (cf): 0168000

Electric Meter (kW-hr): 55020

SVE SYSTEM DATA:

System Run Time (hrs): 7679

@ (time): 1300

Temperature (°F): Hi Temp 1463

Thermal: —

Vacuum (inches H_2O): 50

Total Flow (cfm): 260

Opacity of Stack Emissions: CLEAR

Corrective Action Taken: NONE

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	260	2" Hg / 50" H_2O	208	85.5	56.1
Effluent	—	—	1.9		
P-1	104	35" VAC	175	79.4	64.4
P-2	128	34" VAC	133	80.2	65.1
P-3	105	1 psi (pressure)		84.9	60.0

COMMENTS (maintenance required, analytical samples taken and method, etc.):

USED SCORPION METER. NOT MINI-RAE PID

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 8/23/06

Technician and Company: GE VEELAND GROUP

GENERAL SYSTEM DATA:

Gas Meter (cf): 0197000

Electric Meter (kW-hr): 56696

SVE SYSTEM DATA:

System Run Time (hrs): 7846

@ (time): 1000

Temperature (°F): Hi Temp 1458

Thermal: —

Vacuum (inches H_2O): 52

Total Flow (cfm): 222

Opacity of Stack Emissions: CLEAR

Corrective Action Taken: NONE

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	222	52" H_2O	180	91.5	45
Effluent	—	—	1.2	—	—
P-1	68	25	220	94.2	38
P-2	140	~~35~~ 40	165	96.8	36.5
P-3	100	1 psi	1.5	100.6	37.2

COMMENTS (maintenance required, analytical samples taken and method, etc.):

REDUCED FLOW (closed valve) @ P-1 to try & INCREASE FLOW FROM P-2, per Molly Collins

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 8/31/06

Technician and Company: GF, VERDAD

GENERAL SYSTEM DATA:

Gas Meter (cf): 1,529,000

Electric Meter (kW-hr): 58705

SVE SYSTEM DATA:

System Run Time (hrs): 8043

@ (time): 1430

Temperature (°F): Hi Temp 1463

Thermal: —

Vacuum (inches H_2O): 52

Total Flow (cfm):

Opacity of Stack Emissions: Clear

Corrective Action Taken: NONE

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	230	52.	148	98	30
Effluent	—	—	0.1	—	—
P-1	84	25	165	97	39
P-2	120	38	170	98	36
P-3	100	1 psi	0.1	96	28

COMMENTS (maintenance required, analytical samples taken and method, etc.):

collect INF + EFF TEDLARS.

SYSTEM DOWN for 2.5 DAYS 9/11 to 9/13

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 9/15/06

Technician and Company: GE/VERTAD

GENERAL SYSTEM DATA:

Gas Meter (cf): ·

Electric Meter (kW-hr): 61962

SVE SYSTEM DATA:

System Run Time (hrs): 8351

@ (time): 1300

Temperature (°F): Hi Temp 1453

Thermal: —

Vacuum (inches H_2O): 50

Total Flow (cfm): 290

Opacity of Stack Emissions: Clear

Corrective Action Taken: NONE

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	290	50	175	98.1	17.2
Effluent		—	1		
P-1	71	20	193	93.7	18.7
P-2	80	22	9	93.8	17.6
P-3	101	1 psi	4.5	98.1	17.1

COMMENTS (maintenance required, analytical samples taken and method, etc.):

East Boring →	B.2	41	28	55	93.7	18.1
→	B.4	113	18	5	93.8	18.1
Westernmost						

Molly - Note that highest Flow Rate, lowest concentration & lowest Suction were all at the New ADDITION - B-4.

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 9.8.06

Technician and Company: GF, VERIDAD

GENERAL SYSTEM DATA:

Gas Meter (cf): 2,210,000

Electric Meter (kW-hr): 60682

SVE SYSTEM DATA:

System Run Time (hrs): 8233

@ (time): 1300

Temperature (°F): Hi Temp 1459

Thermal: —

Vacuum (inches H_2O): 54

Total Flow (cfm):

Opacity of Stack Emissions: CLEAR

Corrective Action Taken: NONE

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	245	54"	210	86.9	46.3
Effluent	—	—	0.1	—	—
P-1	88	28	80	87.9	46.0
P-2	140	44	160	89.0	46.7
P-3	112	10 psi	0.1	92.7	44.0

COMMENTS (maintenance required, analytical samples taken and method, etc.):

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 9.21.06

Technician and Company: VERDAD / GF

GENERAL SYSTEM DATA:

Gas Meter (cf): 3358,000

Electric Meter (kW-hr): 63,532

SVE SYSTEM DATA:

System Run Time (hrs): 8497

@ (time): 1420

Temperature (°F): Hi Temp 1453

Thermal: —

Vacuum (inches H_2O): 52

Total Flow (cfm): 290

Opacity of Stack Emissions: CLEAR

Corrective Action Taken: NONE

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	290	52	130	92.1	14.8
Effluent	—	—	0.2	—	—
P-1	45	~~24~~ 10	145	95.0	13.1
P-2	105	22	123	97.1	15.0
P-3	207	3 psi	0.2	99.3	7.7

COMMENTS (maintenance required, analytical samples taken and method, etc.):

B-2	25	14	65	94.2	13.0
B-4	129	18	17.5	99.1	13.7

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 9.29.06

Technician and Company: GF VERDAD

GENERAL SYSTEM DATA:

Gas Meter (cf): 4210,000

Electric Meter (kW-hr): 67087

SVE SYSTEM DATA:

System Run Time (hrs): 8088

@ (time): 1330

Temperature (°F): Hi Temp 1453

Thermal: —

Vacuum (inches H_2O): 56

Total Flow (cfm): 291

Opacity of Stack Emissions: CLEAR

Corrective Action Taken: NONE

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	291	56	140	96	1.8
Effluent	—	—	1.0	—	—
P-1	110	10	6.7	95	2.2
P-2	110	24	160	94	2.1
P-3	OUT OF RANGE ~200 CFM	3 psi	—	127	2.2

COMMENTS (maintenance required, analytical samples taken and method, etc.):

B-2	26	12	16.1	93	2.6
B-4	122	18	110	94	3.3

NOTE: GATE OPEN UPON ARRIVAL.

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 10/5/06

Technician and Company: GF VERDAD

GENERAL SYSTEM DATA:

Gas Meter (cf): 4,852,000

Electric Meter (kW-hr): 64754

SVE SYSTEM DATA:

System Run Time (hrs): 8831

@ (time): 1245

Temperature (°F): Hi Temp 144.6

Thermal: —

Vacuum (inches H_2O): 58

Total Flow (cfm):

Opacity of Stack Emissions: CLEAR

Corrective Action Taken: NONE

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	285	58	100.7	97.4	19.3
Effluent	—	—	3.3	—	—
P-1	49	14	233	96.3	22.1
P-2	107	26	154	96.8	19.9
P-3	120	3 psI	—	97.4	22

Reduce to 1.5 psI, Flow to 120 CFM

COMMENTS (maintenance required, analytical samples taken and method, etc.):

B-2	44.	15	132	96.2	19.7
B-4	127	24	39.8	97.2	20.5

FID background 0.6ppm

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 10/13/06

Technician and Company: GF VERDAD

GENERAL SYSTEM DATA:

Gas Meter (cf): 5,329,000

Electric Meter (kW-hr): 714,997

SVE SYSTEM DATA:

System Run Time (hrs): 8948

@ (time): 1430

Temperature (°F): Hi Temp 1527

Thermal: —

Vacuum (inches H_2O): 50

Total Flow (cfm): . .

Opacity of Stack Emissions: CLEAR

Corrective Action Taken: NONE

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	284	50	110	93.2	12.2
Effluent	—	—	0.1	—	—
P-1	73	14	170.3	93.1	12.3
P-2	94.2	20	84.	93.7	12.2
P-3	124	1 psi	—	—	—

COMMENTS (maintenance required, analytical samples taken and method, etc.):

B-2	36	12	12.4	92.4	12.9
B-4	119	18	20.0	94.7	11.8

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 10/20/06

Technician and Company: GE VERDAD

GENERAL SYSTEM DATA:

Gas Meter (cf): 5760,000

Electric Meter (kW-hr): 72 887

SVE SYSTEM DATA:

System Run Time (hrs): 9113

@ (time): 1330

Temperature (°F): Hi Temp 1451

Thermal: —

Vacuum (inches H_2O): AT

Total Flow (cfm): 285

Opacity of Stack Emissions: CLEAR

Corrective Action Taken: NONE

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	285		150	92.1	7.3
Effluent	—	—	1	—	—
P-1	85	1.0	270	93.1	7.6
P-2	110	18	170	92.7	7.4
P-3	125	PSI	—	—	—

COMMENTS (maintenance required, analytical samples taken and method, etc.):

B.2	38	10	170	93.2	8.0
B-4	115	12	7	94.1	7.5

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 10/26/06

Technician and Company: GF VERDAD

GENERAL SYSTEM DATA:

Gas Meter (cf): 6,330,000

Electric Meter (kW-hr): 74394

SVE SYSTEM DATA:

System Run Time (hrs): 9251

@ (time): 0730

Temperature (°F): Hi Temp 1449

Thermal: —

Vacuum (inches H_2O): 44

Total Flow (cfm): 270

Opacity of Stack Emissions: CLEAR

Corrective Action Taken: NONE

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	270	44	150	73.4	12.6
Effluent	—	—	-1.0	—	—
P-1	65	18	50	74.2	12.5
P-2	46	8	4.8	75.1	12.1 ↓ * DECR FLOW
P-3	126	1 PSI	—	—	—

COMMENTS (maintenance required, analytical samples taken and method, etc.):

B-2 42/85 | 22/35 160 75.1 12.1 ↑ INCR FLOW

B-4 42 | 6 4 74.2 12.4 ↓ * DECR FLOW

SAMPLE IN + EFF, TEDLARS

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 11/3/06

Technician and Company: GF VERDAD

GENERAL SYSTEM DATA:

Gas Meter (cf): 7,101,000

Electric Meter (kW-hr): 76717

SVE SYSTEM DATA:

System Run Time (hrs): 9450

@ (time): 1445

Temperature (°F): Hi Temp 1462

Thermal: —

Vacuum (inches H_2O): 52

Total Flow (cfm): 250

Opacity of Stack Emissions: CLEAR

Corrective Action Taken: —

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	250	52	170	86.1	14.0
Effluent	—	—	-1	—	—
P-1	60	24	140	87.8	11.8
P-2	40	10	80	88.1	11.6
P-3	113	1 psi	—	—	—

COMMENTS (maintenance required, analytical samples taken and method, etc.):

B-2	73	36	150	87.2	12.2
B-4	68	8	12	88.9	11.6

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 11/15/06

Technician and Company: GF VERDAD

GENERAL SYSTEM DATA:

Gas Meter (cf): 8,180,000

Electric Meter (kW-hr): 80,164

SVE SYSTEM DATA:

System Run Time (hrs): 9738

@ (time): 1420

Temperature (°F): Hi Temp 1458

Thermal: —

Vacuum (inches H_2O): 56

Total Flow (cfm): 250

Opacity of Stack Emissions: CLEAR

Corrective Action Taken: NONE

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	250	56	160	78	9.9
Effluent	—	—	1.1	—	—
P-1	50	16	190	81	9.1
P-2	38	14	123	82	8.9
P-3	~~34~~ 119	1 psi	—		

COMMENTS (maintenance required, analytical samples taken and method, etc.):

B-2	70	38	315	79	10.0
B-4	34	12	13	79	9.6

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 11/10/06

Technician and Company: M. WALLACE

GENERAL SYSTEM DATA:

Gas Meter (cf): 7722

Electric Meter (kW-hr): 78671

SVE SYSTEM DATA:

System Run Time (hrs): 96149

@ (time): 1055

Temperature (°F): Hi Temp 1460

Thermal: 1425

Vacuum (inches H_20): 58

Total Flow (cfm): 248

Opacity of Stack Emissions: NA

Corrective Action Taken: ~~6~~

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	248	3" Hg		81.7	27.9
Effluent	208	—		132.2	18.6
P-1	53.5	18		79.6	25.3
P-2	39.1	0		79.8	26.4
P-3	128	—		90.7	18.4
B-2	74	39		78.9	14.9
B-4	73	10		81.3	28.9

COMMENTS (maintenance required, analytical samples taken and method, etc.):

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 11/21/06

Technician and Company: GE VERDAD

GENERAL SYSTEM DATA:

Gas Meter (cf): 8607000

Electric Meter (kW-hr): 81963

SVE SYSTEM DATA:

System Run Time (hrs): 9882

@ (time): 1415

Temperature (°F): Hi Temp 1437

Thermal: —

Vacuum (inches H_2O): 60

Total Flow (cfm):

Opacity of Stack Emissions: CLEAR

Corrective Action Taken: NONE

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	233	60	215	88.1	10.2
Effluent	—	—	1.6	—	—
P-1	65	18	185	89.1	12.6
P-2	45	.12	71	89.0	10.1
P-3	110	1 psI	—	—	—

COMMENTS (maintenance required, analytical samples taken and method, etc.):

B-2	100	45	310	89.0	9.6
B-4	32	6	11	89.5	11.0

SAMPLES TEDLARS @ 0700 INF + EFF

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 12/1/06

Technician and Company: GF VERDAD

GENERAL SYSTEM DATA:

Gas Meter (cf): 9,554,000

Electric Meter (kW-hr): 849855

SVE SYSTEM DATA:

System Run Time (hrs): 10,119

@ (time): 1110

Temperature (°F): Hi Temp 1454

Thermal: —

Vacuum (inches H_2O): 62

Total Flow (cfm): 222

Opacity of Stack Emissions: CLEAR

Corrective Action Taken: NONE

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	222	62	180	71.9	6.5
Effluent	—	—	2.6	—	—
P-1	70	18	185	71.6	7.5
P-2	42	5	60	70.3	8.8
P-3	122	1 psi	—	—	—

COMMENTS (maintenance required, analytical samples taken and method, etc.):

B-2	91	45	280	71.5	7.6
B-4	OFF				

REMOVE 7 DRUMS OF SOIL TO LOS REALES LANDFILL

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 12/8/06

Technician and Company: GF, VERIDAD

GENERAL SYSTEM DATA:

Gas Meter (cf): 0136,000

Electric Meter (kW-hr): 87,289

SVE SYSTEM DATA:

System Run Time (hrs): 10,289

@ (time): 1400

Temperature (°F): Hi Temp 1425

Thermal: —

Vacuum (inches H_2O): 64

Total Flow (cfm): 240

Opacity of Stack Emissions: CLEAR

Corrective Action Taken: NONE

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	240	64	240	73.3	19.1
Effluent	—	—	0.1	—	—
P-1	60	18	145	75.5	19.0
P-2	40	12	31	75.0	19.0
P-3	110	1 PSI	—	—	—
B-2	95	50	290	75.5	19.2

COMMENTS (maintenance required, analytical samples taken and method, etc.):

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 12/13/06

Technician and Company: GE VERDAD

GENERAL SYSTEM DATA:

Gas Meter (cf): 0718,000

Electric Meter (kW-hr): 89628

SVE SYSTEM DATA:

System Run Time (hrs): 10457

@ (time): 1400

Temperature (°F): Hi Temp 1471

Thermal: —

Vacuum (inches H_2O): 64

Total Flow (cfm): 205

Opacity of Stack Emissions: CLEAR

Corrective Action Taken: NONE

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	205	64	225	84.0	10.6
Effluent	—	—	1.4	—	—
P-1	57	15	170	81.0	15.6
P-2	25	15	37	82.0	12.6
P-3	101.0	1 psi	—	—	—
B-2	120.0	48	275	80.7	13.5

COMMENTS (maintenance required, analytical samples taken and method, etc.):

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: [illegible]

Technician and Company: GF VERDAD

GENERAL SYSTEM DATA:

Gas Meter (cf): 1,141,000

Electric Meter (kW-hr): 91,693

Post-it® Fax Note 7671	Date 12/21/06 # of pages ▸ 1
To Molly Collins	From Gene Fouslee
Co./Dept.	Co. VERDAD
Phone #	Phone # 834 2735
Fax #	Fax #

SVE SYSTEM DATA:

System Run Time (hrs): 1[illegible]96

@ (time): 0800

Temperature (°F): Hi Temp 1431

Thermal: ——

Vacuum (inches H_20): 60

Total Flow (cfm): 205

Opacity of Stack Emissions: Clear

Corrective Action Taken: NONE

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	205	60	250	41	33
Effluent	—	—	1.7	—	—
P-1	75	44	145	43	29
P-2	50	15	18	44	30
P-3	112	1 psi	—	—	—

TURN OFF TO ALLOW RECOVERY

B-2

COMMENTS (maintenance required, analytical samples taken and method, etc.):

B-4 CONCENTRATION = 12.3 ppm. REMAIN TURNED OFF

P-2 CONC. = 18 ppm. Close OFF FOR REBOUND

Will collect Monthly INF + EFF TEDLARS

ON 12/28/06

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 12/28/00

Technician and Company: GF VERDAD

GENERAL SYSTEM DATA:

Gas Meter (cf): 1,606,000

Electric Meter (kW-hr): 94200

SVE SYSTEM DATA:

System Run Time (hrs): 10753

@ (time): 0900

Temperature (°F): Hi Temp 1533

Thermal: —

Vacuum (inches H_20): 50

Total Flow (cfm): 250

Opacity of Stack Emissions: CLEAR

Corrective Action Taken: NONE

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	250	50	206	47	51
Effluent	—	—	0.2	—	—
P-1	100	38	110	46	57
P-2	OFF		16		
P-3	110	1 psi	—	—	—
B-2 (east)	60	38	390	47	55

COMMENTS (maintenance required, analytical samples taken and method, etc.):

B-4 (west) OFF 10 ppm

SAMPLED INFT EFF @ 0910 & 0900, Respectively

TEDLAR for TPH

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 1/4/07

Technician and Company: GF VERDAD

Post-it® Fax Note 7671	Date 1/5/07	# of pages ▸ 1
To Molly Collins	From GENE FUSHARE	
Co./Dept.	Co. VERDAD	
Phone # 791-5415	Phone # 834 2735	
Fax #	Fax #	

GENERAL SYSTEM DATA:

Gas Meter (cf): 2,388,000

Electric Meter (kW-hr): 96,780

SVE SYSTEM DATA:

System Run Time (hrs): 10,725

@ (time): 14:30

Temperature (°F): Hi Temp 145.3

Thermal: —

Vacuum (inches H_2O): 52

Total Flow (cfm): 153

Opacity of Stack Emissions: Clear

Corrective Action Taken: NONE

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	153	52	164	71	6.8
Effluent	—	—	1.2	—	—
P-1	80	35	130	55	5.9
P-2	OFF	—	32	~~54~~	~~2.4~~
P-3.	110	1 psi	—	—	—
B-2	70	36	250	54	5.1

COMMENTS (maintenance required, analytical samples taken and method, etc.):

B-4 OFF 16 ppm

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 1/12/07

Technician and Company: GF VERDAD

GENERAL SYSTEM DATA:

Gas Meter (cf): 3,949,000

Electric Meter (kW-hr): 99448

SVE SYSTEM DATA:

System Run Time (hrs): 11117

@ (time): 1500

Temperature (°F): Hi Temp 1474

Thermal: —

Vacuum (inches H_20): 54

Total Flow (cfm): 208

Opacity of Stack Emissions: CLEAR

Corrective Action Taken: NONE

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	208	54	190	71	12
Effluent	—	—	1.3	—	—
P-1	112	32	107	70	11
P-2	(OFF)	—	33	—	—
P-3	111	1 psi	—	—	—
B-2	82	30	245	70	12

COMMENTS (maintenance required, analytical samples taken and method, etc.):

B-4 (OFF) — 17 —

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 1-18-07

Technician and Company: Tony C. - Gerro F

GENERAL SYSTEM DATA:

Gas Meter (cf): 3,450,000

Electric Meter (kW-hr): 01,258

SVE SYSTEM DATA:

System Run Time (hrs): 11,259

@ (time): 1330

Temperature (°F): Hi Temp 1454

Thermal: —

Vacuum (inches H_2O): 50

Total Flow (cfm): 205

Opacity of Stack Emissions: Clear

Corrective Action Taken: None

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	205	50	112.0	72	30
Effluent	—	—	2.1	—	—
P-1	118	35	112.5	71	36
P-2	OFF		39.8		
P-3	125	1 psi	—		
B-2	82	35	0.1	71	30

COMMENTS (maintenance required, analytical samples taken and method, etc.):

B-4 | OFF 18.8

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 1/26/07

Technician and Company: GE VERDAD

GENERAL SYSTEM DATA:

Gas Meter (cf): 4,103,000

Electric Meter (kW-hr): 03630

SVE SYSTEM DATA:

System Run Time (hrs): 11448

@ (time): 1015

Temperature (°F): Hi Temp 1465

Thermal: —

Vacuum (inches H_2O): 56

Total Flow (cfm):

Opacity of Stack Emissions: CLEAR

Corrective Action Taken: NONE

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	205	56	150	67	33
Effluent	—	—	2.5	—	—
P-1	125	35	110	64	34
P-2	OFF	—	35	—	—
P-3	112	1 psi	—	—	—
B-2	80	35	225	65	35

COMMENTS (maintenance required, analytical samples taken and method, etc.):

B-4 (OFF) — 23 — —

PERFORM QTRLY MAINT. - Δ OIL, CHECK BELTS, LUBE

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 1/29/07

Technician and Company: GF VERDAD

GENERAL SYSTEM DATA:

Gas Meter (cf): 4,353,000

Electric Meter (kW-hr): 4530

SVE SYSTEM DATA:

System Run Time (hrs): 11517

@ (time): 0700

Temperature (°F): Hi Temp 1455

Thermal: —

Vacuum (inches H_2O): 60

Total Flow (cfm): 200

Opacity of Stack Emissions: CLEAR

Corrective Action Taken: NONE

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	200	60	170	55	34
Effluent	—	—	3.2	—	—
P-1	95	38	115	51	35
P-2	OFF	—	32	—	—
P-3	110	1 psi	—	—	—
B-2	100	40	230	52	36

COMMENTS (maintenance required, analytical samples taken and method, etc.):

B-4 OFF 18

Sample INF + EFF TEDLARS 8015, 8021

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 2-9-07

Technician and Company: Tony Cirello / Verdad

GENERAL SYSTEM DATA:

Gas Meter (cf): 5,370,000

Electric Meter (kW-hr): 8,034

Post-it® Fax Note 7671	Date 2-9-07	# of pages ▸ 1
To Molly Collins	From Tony Cirello	
Co./Dept.	Co. Verdad	
Phone # 791-5415	Phone # 275-9147	
Fax #	Fax #	

SVE SYSTEM DATA:

System Run Time (hrs): 11,785.7

@ (time): 1200

Temperature (°F): Hi Temp 1455

Thermal: —

Vacuum (inches H_2O): 58

Total Flow (cfm): 212

Opacity of Stack Emissions: Clear

Corrective Action Taken: None

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	212	58 H_2O	155	78.4	34.9
Effluent	—	—	0.5	—	—
P-1	8.5	36 H_2O	125	75.2	24.1
P-2	off	—	28	~~73.9~~ 72	
P-3	115	1 psi	—	—	—
B-2	90	37 H_2O	85	73.9	22.5

COMMENTS (maintenance required, analytical samples taken and method, etc.):

B-4 off — 12 72.1 45.2

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 2-9-07

Technician and Company: Tony Cirello / Verdad

GENERAL SYSTEM DATA:

Gas Meter (cf): 5370,000

Electric Meter (kW-hr): 8,034

Post-it® Fax Note 7671	Date 2-9-07	# of pages ▸ 1
To Molly Collins	From Tony Cirello	
Co./Dept.	Co. Verdad	
Phone # 791-5415	Phone # 275-9147	
Fax #	Fax #	

SVE SYSTEM DATA:

System Run Time (hrs): 11,785.7

@ (time): 1200

Temperature (°F): Hi Temp 1455

Thermal: —

Vacuum (inches H_2O): 58

Total Flow (cfm): 212

Opacity of Stack Emissions: Clear

Corrective Action Taken: None

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	212	58 H_2O	155	78.4	34.9
Effluent	—	—	0.5	—	—
P-1	85	36 H_2O	125	75.2	24.1
P-2	off	—	28	~~73.9~~ T2	
P-3	115	1 psi	—	—	—
B-2	90	37 H_2O	85	73.9	22.5

COMMENTS (maintenance required, analytical samples taken and method, etc.):

B-4 off — 12 72.1 45.2

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 2-16-07

Technician and Company: Tony Cirello/Vendad

GENERAL SYSTEM DATA:

Gas Meter (cf): 6,019,000

Electric Meter (kW-hr): 10,224

Post-it® Fax Note 7671	Date 2-16-07	# of pages ▸ 1
To Molly Collins	From Tony Cirello	
Co./Dept.	Co. Vendad	
Phone #	Phone # 275-9147	
Fax #	Fax #	

SVE SYSTEM DATA:

System Run Time (hrs): 11,955.2

@ (time): 1400

Temperature (°F): Hi Temp 1452

Thermal: —

Vacuum (inches H_20): 60

Total Flow (cfm): 269

Opacity of Stack Emissions: clear

Corrective Action Taken: none

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	269	60 H20	172	77.8	56.0
Effluent	—	—	0.9	—	—
P-1	141	35 H20	122	73.7	14.3
P-2	off	—	30	—	—
P-3	122	1 PSI	—	—	—
B-2	91.0	36 H20	107	69.3	19.0

COMMENTS (maintenance required, analytical samples taken and method, etc.):

B-4 off — 15

Molly Collins

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 2/23/07

Technician and Company: GF VERDAD

GENERAL SYSTEM DATA:

Gas Meter (cf): 6620,000

Electric Meter (kW-hr): 12301

SVE SYSTEM DATA:

System Run Time (hrs): 12117

@ (time): 0700

Temperature (°F): Hi Temp 146l

Thermal: —

Vacuum (inches H_2O): 60

Total Flow (cfm): 220

Opacity of Stack Emissions: CLEAR

Corrective Action Taken: NAL

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. ✓ (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	220	60	583	58	30
Effluent	—	—	0.5	—	—
P-1	92	38	306	57	28
P-2	OFF	—	37	—	—
P-3	110	1 psi	—	—	—
B-2	70	38	314	57	28

COMMENTS (maintenance required, analytical samples taken and method, etc.):

B-4 OFF 49 ~~54~~ ~~38~~

COLLECT MONTHLY TEDLAR IHF + RAF FOR TPH & BTEX

✓ MINI RAE PID

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 3/2/07

Technician and Company: GF VERDAD

GENERAL SYSTEM DATA:

Gas Meter (cf): 7000

Electric Meter (kW-hr): 13602

Post-it® Fax Note 7671	Date 3/8/07 # of pages ▸ 1
To Molly Collins	From Gene Verdad
Co./Dept.	Co.
Phone #	Phone #
Fax #	Fax #

SVE SYSTEM DATA:

System Run Time (hrs): ~~13,607~~ 12222

@ (time): 1500

Temperature (°F): Hi Temp 1458

Thermal: —

Vacuum (inches H_2O): 54

Total Flow (cfm): 260

Opacity of Stack Emissions: CLEAR

Corrective Action Taken: NONE

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	260	54	460	74	28
Effluent	—	—	0.1	—	—
P-1	95	36	265	73	30
P-2	OFF	—	32	—	—
P-3	110	1 PSI	—	—	—
B-2	65	36	300	72	29

COMMENTS (maintenance required, analytical samples taken and method, etc.):

B-4 OFF — 51 — —

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 3/9/07

Technician and Company: GF VERDAD

GENERAL SYSTEM DATA:

Gas Meter (cf): 7,590,000

Electric Meter (kW-hr): 15,602

Post-it® Fax Note 7671	Date 3/12/07	# pages
To Molly Collins	From Gerro	
Co./Dept.	Co.	
Phone #	Phone #	
Fax #	Fax #	

SVE SYSTEM DATA:

System Run Time (hrs): 12388

@ (time): 1320

Temperature (°F): Hi Temp 1458

Thermal: ——

Vacuum (inches H_2O): 50

Total Flow (cfm): 260

Opacity of Stack Emissions: CLEAR

Corrective Action Taken: NONE

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	260	50	130	89	7.8
Effluent	——	——	0.1	——	——
P-1	190	30	80	90	8.0
P-2	OFF	——	~~94~~	——	
P-3	110	1 psi	——	——	——
B-2	116	34	94	90	8.6

COMMENTS (maintenance required, analytical samples taken and method, etc.):

B-4 OFF —— 16 ——

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 3-15-07

Technician and Company: Tony Civiello / Verdad

GENERAL SYSTEM DATA:

Gas Meter (cf): 8085,000

Electric Meter (kW-hr): 17,258

SVE SYSTEM DATA:

System Run Time (hrs): 12528.0

@ (time): 0800

Temperature (°F): Hi Temp 1458

Thermal: —

Vacuum (inches H_2O): 51

Total Flow (cfm): 278

Opacity of Stack Emissions: Clear

Corrective Action Taken: None

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	278	51	119	80.7	11.5
Effluent	—	—	0.3	—	—
P-1	142	30	82	79.1	11.0
P-2	off	—	63	—	—
P-3	116	1 psi	—	—	—
B-2	113	35	165	78.7	11.1

COMMENTS (maintenance required, analytical samples taken and method, etc.):

B-4 off — 21 — —

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 3-22-07

Technician and Company: Tony Giralto / Verdad

GENERAL SYSTEM DATA:

Gas Meter (cf): 8,695,000

Electric Meter (kW-hr): 19,243

SVE SYSTEM DATA:

System Run Time (hrs): 12,700.1

@ (time): 1330

Temperature (°F): Hi Temp 1447

Thermal: —

Vacuum (inches H_2O): 51

Total Flow (cfm): 216

Opacity of Stack Emissions: clear

Corrective Action Taken: none

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	216	51	121	79.7	27.3
Effluent	—	—	0.4	—	—
P-1	132	32 H_2O	68	76.5	30.1
P-2	off	—	39	—	—
P-3	110	1 psi	—	—	—
B-2	105	35 H_2O	144	75.8	27.9
B-4	off	—	18	—	—

COMMENTS (maintenance required, analytical samples taken and method, etc.):

Unable to get Field conc. (ppm) readings today. Will change Scorpion meter to site + get readings 3-23-07 Friday.

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 3-28-07

Technician and Company: Tony Cirello/Verdad

GENERAL SYSTEM DATA:

Gas Meter (cf): 9,214,000

Electric Meter (kW-hr): 20953

SVE SYSTEM DATA:

System Run Time (hrs): 12,840.4

@ (time): 0856

Temperature (°F): Hi Temp 1425

Thermal: —

Vacuum (inches H_2O): 52

Total Flow (cfm): 153

Opacity of Stack Emissions: clear

Corrective Action Taken: none

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	153	52	131	59.3	41.2
Effluent	—	—	0.2	—	—
P-1	101	32 H2O	97	58.7	28.3
P-2	off	—	55	—	—
P-3	115	1 psi	—	—	—
B-2	70.5	35 H2O	145	59.7	30.1

COMMENTS (maintenance required, analytical samples taken and method, etc.):

B-4 off — 23 — —

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 4-6-07

Technician and Company: Tony Circello / Verdad

GENERAL SYSTEM DATA:

Gas Meter (cf): 38,000

Electric Meter (kW-hr): 23,414

FIXED GAS LANTEC

SVE SYSTEM DATA:

System Run Time (hrs): 13055.4

@ (time): 0800

Temperature (°F): Hi Temp 1451

Thermal: —

Vacuum (inches H_20): 42

Total Flow (cfm): 210

Opacity of Stack Emissions: Clear

Corrective Action Taken: none

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	210	42	63	77.1	17.9
Effluent	—	—	~~4~~ 3	—	—
P-1	127	27 in H_2O	71	82.5	14.6
P-2	off	0	29	83.4	13.6
P-3	124	1psi	—	94.5	14.0
B-2	off	0	8	81.9	14.5

COMMENTS (maintenance required, analytical samples taken and method, etc.):

B-4 148 0 10 83.5 12.7

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 4/13/07

Technician and Company: M. WALLACE Verdad

GENERAL SYSTEM DATA:

Gas Meter (cf): 0697

Electric Meter (kW-hr): 25355

SVE SYSTEM DATA:

System Run Time (hrs): 13226.5

@ (time): 1105

Temperature (°F): Hi Temp 1450

Thermal: 1441

Vacuum (inches H_2O): 42

Total Flow (cfm):

Opacity of Stack Emissions:

Corrective Action Taken:

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	217 *	42	41.6	111.7 *	27.7 * positive pressure side of blower
Effluent	–	–	0.0	–	–
P-1	97.0	-7	105	75.8	20.5
P-2	~~0~~	offline	15.9	–	–
P-3	127	+2	–	75.8	25.3
B-2	~~0~~	offline	4.0	–	–
B-4	124	-4	9.5	71.5	24.3

COMMENTS (maintenance required, analytical samples taken and method, etc.):

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 4-19-07

Technician and Company: Tony Cirello / Verdad

GENERAL SYSTEM DATA:

Gas Meter (cf): 1,252,000

Electric Meter (kW-hr): 27,018

SVE SYSTEM DATA:

System Run Time (hrs): 13,371.1

@ (time): 1145

Temperature (°F): Hi Temp 1450

Thermal: —

Vacuum (inches H_2O): 42

Total Flow (cfm): 257

Opacity of Stack Emissions: Clear

Corrective Action Taken: none

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	257	42	67.9	89.1	8.3
Effluent	—	—	0.5	—	—
P-1	139	27 H_2O	86.5	79.1	16.9
P-2	off	—	39.3	—	—
P-3	97.5	1 psi	—	—	—
B-2	off	—	3.5	—	—
B-4	142	18 H_2O	14.1	83.8	20.6

COMMENTS (maintenance required, analytical samples taken and method, etc.):

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 4/26/07

Technician and Company: Tony [illegible] / [illegible]

GENERAL SYSTEM DATA:

Gas Meter (cf): 1,936,000

Electric Meter (kW-hr): 29,046

SVE SYSTEM DATA:

System Run Time (hrs): 13,533.5

@ (time): [illegible]

Temperature (°F): Hi Temp 1450

Thermal: —

Vacuum (inches H_2O): 52

Total Flow (cfm): [illegible]

Opacity of Stack Emissions: Clear

Corrective Action Taken: None

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	258	52 H_2O	57.9	76.1	15.4
Effluent	—	—	1.1	—	—
P-1	123	33 H_2O	64.4	77.2	22.2
P-2	off	—	~~+2.2~~ 36.2	—	—
P-3	133	1 psi	—	—	—
B-2	off	—	2.2	—	—

COMMENTS (maintenance required, analytical samples taken and method, etc.):

B-4 153 17 H_2O 8.0 77.9 19.4

RECEIVED

MAY 03 2007

ENVIRONMENTAL SERVICES
100 N. STONE AVE., 2ND FLOOR

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

ENVIRONMENTAL SERVICES
100 N. STONE AVE., 2ND FLOOR

Date: 5-2-07

Technician and Company: Tony Cirello/Verdad

GENERAL SYSTEM DATA:

Gas Meter (cf): 2,583,000

Electric Meter (kW-hr): 30894

SVE SYSTEM DATA:

System Run Time (hrs): 13682.3

@ (time): 1145

Temperature (°F): Hi Temp 1450

Thermal: —

Vacuum (inches H_2O): 52

Total Flow (cfm): 332

Opacity of Stack Emissions: Clear

Corrective Action Taken: none

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	332	52 H_2O	72.2	99.5	14.4
Effluent	—	—	0.9	—	—
P-1	171	34 H_2O	79.8	93.5	12.1
P-2	off	—	21.8	—	—
P-3	109	1 psi	—	117.5	9.0
B-2	off	—	3.6	—	—

COMMENTS (maintenance required, analytical samples taken and method, etc.):

B-4	203	18 H_2O	5.5	93.3	14.8

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 5-7-07

Technician and Company: Tony Cirucello / Verdad

GENERAL SYSTEM DATA:

Gas Meter (cf): 3,147,000

Electric Meter (kW-hr): 32,410

Post-it® Fax Note 7671	Date 5-7-07 # of pages ▸ 1
To Molly Collins	From Tony Cirucello
Co./Dept. Env.	Co.
Phone #	Phone #
Fax # 791-5417	Fax #

SVE SYSTEM DATA:

System Run Time (hrs): 13,803.7

@ (time): 1330

Temperature (°F): Hi Temp 1450

Thermal: —

Vacuum (inches H_2O): 52

Total Flow (cfm): 225

Opacity of Stack Emissions: Clear

Corrective Action Taken: none

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	225	52 H_2O	73.5	86.1	10.0
Effluent	—	—	0.7	—	—
P-1	153	33 H_2O	90.5	89.1	7.6
P-2	off	—	49.9	—	—
P-3	107	1 Psi	—	119.9	2.2
B-2	off	—	1.7	—	—
B-4	171	2.0 H_2O	9.3	89.8	7.9

COMMENTS (maintenance required, analytical samples taken and method, etc.):

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 5/18/07

Technician and Company: MFW/Vercad

GENERAL SYSTEM DATA:

Gas Meter (cf): 4266

Electric Meter (kW-hr): 35407

SVE SYSTEM DATA:

System Run Time (hrs): 14057.1

@ (time): 0901

Temperature (°F): Hi Temp 1423

Thermal: 1440

Vacuum (inches H_2O): 44

Total Flow (cfm): 284

Opacity of Stack Emissions: —

Corrective Action Taken: NA

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	284	-3" Hg	—	84.7	25.6
Effluent	—	—	—	—	—
P-1	128	-30	—	81.5	23.6
P-2	Valve off	—	—	—	—
P-3	128	+20	—	114.7	15.5
B-2	Valve off	—	—	—	—
B-4	141	19	—	81.1	22.7

COMMENTS (maintenance required, analytical samples taken and method, etc.):

No instrument for concentrations

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 5/24/07

Technician and Company: MFW/Verdad

GENERAL SYSTEM DATA:

Gas Meter (cf): 4914

Electric Meter (kW-hr): 37126

SVE SYSTEM DATA:

System Run Time (hrs): 14202.9

@ (time): 1045

Temperature (°F): Hi Temp 1432

Thermal: 1451

Vacuum (inches H_2O): 46

Total Flow (cfm): 289

Opacity of Stack Emissions: N/A

Corrective Action Taken: N/A

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	289	-37	—	97.4	17.8
Effluent	—	—	—	—	—
P-1	134	-29	—	93.4	14.1
P-2	77.5	-20	—	88.7	13.1
P-3	120	+20	—	123.4	6.3
B-2	Offline	—	—	—	—
B-4	128	-13	—	83.1	13.7

COMMENTS (maintenance required, analytical samples taken and method, etc.):

No instrument for concentration

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 6/1/07

Technician and Company: Verdiel/LMFW

GENERAL SYSTEM DATA:

Gas Meter (cf): 5834

Electric Meter (kW-hr): 39444

SVE SYSTEM DATA:

System Run Time (hrs): 14395.7

@ (time): 1135

Temperature (°F): Hi Temp 1429

Thermal: 1450

Vacuum (inches H_20): 46

Total Flow (cfm):

Opacity of Stack Emissions: NA

Corrective Action Taken: NA

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	286	-36	—	91.4	24.2
Effluent					
P-1	118	-25	—	83.3	7.4
P-2	80.5	-21		89.1	7.0
P-3	119	-16	—	128.6	3.0
B-2	offline	—	—	—	—
B-4	156	-14	—	94.3	6.8

COMMENTS (maintenance required, analytical samples taken and method, etc.):

No instrument for concentration readings

SVE SYSTEM DATA
CITY OF TUCSON
35 E. TOOLE AVENUE
GENERAL AIR PERMIT NO. 110

Date: 6-7-07

Technician and Company: Tony Circelli Verdad

Post-it® Fax Note 7671	Date 6-7-07	# of pages ▸ 1
To Molly Collins	From Tony C.	
Co./Dept. COT-ES	Co.	
Phone #	Phone #	
Fax #	Fax #	

GENERAL SYSTEM DATA:

Gas Meter (cf): 6,526,000

Electric Meter (kW-hr): 41185

SVE SYSTEM DATA:

System Run Time (hrs): 14540.9

@ (time): 1300

Temperature (°F): Hi Temp 1450

Thermal: —

Vacuum (inches H_2O): 48

Total Flow (cfm): 274

Opacity of Stack Emissions: clear

Corrective Action Taken: none

	Flow Rate (cfm)	Vacuum or Pressure (in H_2O or psi)	Field Conc. (ppm)	Temperature (°F)	Rel. Humidity (%)
Influent	274	48	68.4	90.2	13.3
Effluent	—	—	0.8	—	—
P-1	127	25.5	65.2	86.3	11.6
P-2	off	—	32.7	—	—
P-3	114	17.1	—	—	—
B-2	off	—	3.7	—	—
B-4	140	13.9	10.4	86.8	13.2

COMMENTS (maintenance required, analytical samples taken and method, etc.):

Collect system air samples int + Eff.

APPENDIX 3B

SUMMARY TABLE OF AIR MONITORING DATA

Table 1
Soil Vapor Analytical Results
35 E. Tool Avenue

Date	9/8/2005	9/12/2005	9/22/2005	9/22/2005	10/7/2005	10/7/2005	10/20/2005	10/20/2005	11/2/2005	11/2/2005
Sample ID	P-3	Effluent	Influent	Effluent	Influent	Effluent	Influent	Effluent	Influent	Effluent
Benzene	360	0.58	210	1.8	96	<0.5	55	<0.5	34	<0.5
Toluene	1400	0.046	440	<1.0	130	<1.2	200	<1.0	180	<1.0
Ethylbenzene	480	0.013	120	<1.0	92	<1.0	73	<1.0	59	<1.0
Xylenes	2100	0.19	450	<1.5	380	<1.5	330	<1.5	280	<1.5
TVFH	9799	0.829	7900	<100	3900	<100	6900	<100	6400	<100

Date	11/16/2005	11/16/2005	12/1/2005	12/1/2005	12/15/2005	12/15/2005	12/29/2005	1/11/2006	1/25/2006	1/25/2006
Sample ID	Influent	Effluent	Influent	P-3	Influent	Effluent	Influent	Influent	Influent	Effluent
Benzene	26	<0.5	17	<0.5	21	<0.5	15	22	19	<0.5
Toluene	140	<1.0	99	2.4	100	<1.0	91	61	43	<1.0
Ethylbenzene	49	<1.0	33	2	34	<1.0	32	38	41	<1.0
Xylenes	230	<1.5	150	12	120	<1.5	130	150	160	<1.5
TVFH	5600	<100	3700	140	3600	<100	3000	2600	3300	<100

Date	2/8/2006	3/6/2006	3/6/2006	3/6/2006	3/30/2006	3/30/2006	4/27/2006	4/27/2006	5/24/2006	5/24/2006
Sample ID	Influent	P-1	P-2	Influent	Influent	Effluent	Influent		Influent	Effluent
Benzene	14	15	7.4	9.4	30	<0.5	16	<0.5	19	4.5
Toluene	31	43	3.1	22	20	<1.0	21	1.3	12	3
Ethylbenzene	35	41	12	28	27	<1.0	32	<1.0	20	1.3
Xylenes	140	180	32	70	120.0	<1.5	130	<1.5	91	5.1
TVFH	2200	1900	1500	1800	2000	<100	1700	<100	1700	100

Table 1
Soil Vapor Analytical Results
35 E. Tool Avenue

Date	6/11/2006	6/29/2006	7/26/2006	7/26/2006	8/7/2006	8/7/2006	8/7/2006	8/31/2006	8/31/2006
Sample ID	Effluent	Influent	P-1	P-2	P-1	P-2	P-3	Influent	Effluent
Benzene	<0.5	11	13	6.4	18	15	4.8	10	<0.5
Toluene	<1.0	13	26	2.2	14	<1	9.1	19	<1.0
Ethylbenzene	<1.0	16	17	7.4	8.9	15	12	13	<1.0
Xylenes	<1.5	97	120	34	38	33	59	57	2.7
TVFH	<100	1900	2200	1600	1200	2900	1800	1200	<100

Date	9/28/2006	9/28/2006	10/26/2006	10/26/2006	11/21/2006	11/21/2006	12/28/2006	12/28/2006	1/29/2007	1/29/2007
Sample ID	Influent	Effluent	Influent	Effluent	Influent	Effluent	Influent	Effluent	Influent	Effluent
Benzene	4.4	<0.5	5.3	<0.5	4.8	<0.5	5.6	1.4	2.6	<0.5
Toluene	18	<1.0	11	<1.0	35	<1.0	78	22	28	<1.0
Ethylbenzene	11	<1.0	8.6	<1.0	9.7	<1.0	17	4.4	11	<1.0
Xylenes	49	<1.0	45	<1.0	63	2.7	76	20	42	<1.5
TVFH	870	<100	1100	<100	1400	<100	940	240	1000	<100

Date	2/23/2007	2/23/2007	3/28/2007	3/28/2007	4/30/2007	4/30/2007	6/7/2007	6/7/2007
Sample ID	Influent	Effluent	Influent	Effluent	Influent	Effluent	Influent	Effluent
Benzene	3.3	<0.5	1.7	<0.5	1.8	<0.5	1.9	<0.5
Toluene	22	<1.0	15	<1.0	2.2	<1.0	2.1	<1.0
Ethylbenzene	13	<1.0	8.1	<1.0	1.6	<1.0	1.3	<1.0
Xylenes	52	<1.5	35	<1.5	7.1	<1.5	8	<1.5
TVFH	1100	<100	660	<100	500	<100	550	<100

All concentrations are reported in ug/L (mg/m^3)

Samples collected 9/8/05 were analyzed using EPA Method TO-15. Concentrations of TVFH are the sum of all compounds reported above the detection limit.

All other samples were analyzed using EPA Method 8015/8021 for BTEX and TVFH.

TVFH = Total Volatile Fuel Hydrocarbons

<0.5 = Result did not exceed the detection limit of 0.5 ug/L

Table 2
Soil Vapor Analytical Results
35 E. Tool Avenue

Polynuclear Aeromatic Hydrocarbons	Approximate Number of Carbons	Influent 9/8/2005	Effluent 9/8/2005	P-3 9/8/2005	P-1 3/15/2006	P-2 3/15/2006
Acenapthene	C12	<2	<2	<2	38.7	<2
Acenaphthylene	C12	<2.5	<2.5	<2.5	48.8	<2.5
Anthracene	C14	<0.25	<0.25	<0.25	<0.25	<0.25
Benz(a)anthracene	C18	<0.25	<0.25	<0.25	<0.25	<0.25
Benzo(a)pyrene	C20	<0.25	<0.25	<0.25	<0.25	<0.25
Benzo(b)flouranthene	C20	<0.5	<0.5	<0.5	<0.25	<0.5
Benzo(g,h)perylene	C22	<0.5	<0.5	<0.5	<0.25	<0.5
Benzo(k)fluoranthene	C20	<0.25	<0.25	<0.25	<0.25	<0.25
Chrysene	C18	<0.25	<0.25	<0.25	<0.25	<0.25
Dibenz(a,h)anthracene	C22	<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	C16	<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	C13	<0.5	<0.5	<0.5	2.4	<0.5
Indeon(1,2,3-cd)pyrene	C22	<0.25	<0.25	<0.25	<0.25	<0.25
Naphthalene	C10	26.1	<1	102	307	7.1
Phenanthrene	C14	<0.25	<0.25	<0.25	0.35	<0.25
Pyrene	C16	<0.25	<0.25	<0.25	<0.25	<0.25

All concentrations are reported in ug

All samples were analyzed by method NIOSH 5506

Samples were analyzed from the sample tube. Filter samples were also reported but are not shown here.

<0.5 = Result did not exceed the detection limit of 0.5 ug

APPENDIX 3C

SVE MASS REMOVED CALCULATIONS AND GRAPH

TABLE 1
Soil Vapor Extraction System
Mass Removed Calculations
35 E. Tacile Ave.

Reporting Period	9/8/05 to 9/22/05	9/22/05 to 10/7/05	10/7/05 to 10/22/05	10/22/05 to 11/2/05	11/2/05 to 11/16/05	11/16/05 to 12/1/05	12/1/05 to 12/15/05	12/15/05 to 12/29/05	12/29/05 to 01/11/06	1/11/06 to 1/25/06	1/25/06 to 2/8/06	2/8/06 to 3/6/06	3/6/06 to 3/30/06	3/30/06 to 4/27/06	4/27/06 to 5/24/06
Averaged Influent Concentrations mg/m^3 (µg/L)[4],															
Average Total BTEX	2780	959	879	605.5	499	372	267	272	270	267	231	175	163	198	171
Average Benzene	265	153	76	45	30	22	19	18	19	21	17	12	20	23	18
Average Toluene	920	265	160	100	160	120	100	96	76	52	37	27	21	21	17
Average Ethylbenzene	300	108	83	66	54	41	34	33	35	40	38	32	28	30	26
Average Xylenes	1275	415	555	505	255	190	135	125	140	155	150	105	95	125	111
Averaged Operating Conditions [*]															
Gas Reading (cf)	1831000	2249000	3244000	4724000	6423000	8312000	9882000	10380000	12073000	13400000	14934000	17688000	19816000	22312000	24211000
Gas used (cf)	1800000	318000	995000	1480000	1699000	1789000	1470000	690000	1693000	1327000	1534000	2754000	2128000	2496000	1899000
Gas used per hour (cf/hr)	7018	862	4287	4751	5045	4924	4623	2100	5461	3048	4563	4421	3620	3714	3068
Temperature	1457	1445	1434	1450	1445	1455	1440	1444	1438	1448	1435	1402	1451	1461	1461
Influent Flow Rate (scfm)	144	217	282	238	230	251	254	220	239	223	248	278	226	196	145
System Vacuum (" Water)	35	35	30	30	40	60	50	55	55	74	76	52	43	40	28
Start of Reporting Period:	09/08/05	09/22/05	10/07/05	10/22/05	11/02/05	11/16/05	12/01/05	12/15/05	12/29/2005	1/11/2006	1/25/2006	2/8/2006	3/6/2006	3/30/2006	4/27/2006
System Hours:	11.0	279.80	610.4	842.5	1154	1490.8	1854.1	2172.1	2504.5	2814.5	3150.8	3487	4110	4587	5339
End of Reporting Period:	09/22/05	10/07/05	10/22/05	11/02/05	11/16/05	12/01/05	12/15/05	12/29/05	1/11/2006	1/25/2006	2/8/2006	3/6/2006	3/30/2006	4/27/2006	5/24/2006
System Hours:	279.80	610.4	842.5	1154	1490.8	1854.1	2172.1	2504.5	2814.5	3150.8	3487	4110	4587	5339	5858
Total Operating Hours:	268.80	330.00	232.10	311.50	336.80	365.30	318.00	332.40	310.00	336.30	336.20	623.00	557.00	672.00	519.00
Down Time (days):	0.50	1.5	0.5	0	0	0.5	1	1	0	0	0	0	0	0	1
Total Operating Time (days):	13.5	13.3	12.5	13.0	14.0	14.5	13.0	13.0	13.0	14.0	14.0	26.0	24.0	28.0	26.0
Percent Operating Time (%):	96	89	96	100	100	97	92	92	100	100	100	100	100	100	96
Average Mass Removal Rates during reporting period (pounds/day)															
Total BTEX (pounds/day):	35.6	18.7	17.1	12.9	10.3	8.4	6.5	5.3	5.8	5.3	5.8	4.4	3.3	3.5	2.3
Benzene (pounds/day):	3.7	3.0	1.8	1.0	0.6	0.5	0.4	0.4	0.4	0.4	0.4	0.3	0.4	0.4	0.2
Toluene (pounds/day):	11.9	5.5	4.2	4.1	3.3	2.7	2.3	1.9	1.6	1.0	0.8	0.7	0.4	0.4	0.2
Ethylbenzene (pounds/day):	3.9	2.1	2.1	1.4	1.1	0.9	0.8	0.7	0.7	0.8	0.8	0.8	0.6	0.5	0.3
Xylenes (pounds/day):	16.4	8.1	9.0	6.5	5.3	4.3	3.1	2.5	2.9	3.1	3.3	2.6	1.9	2.2	1.4
Mass Removed during reporting period (pounds)															
TOTAL BTEX (pounds):	484	252	214	168	144	121	85	70	72	75	78	113	79	97	58
Benzene (pounds):	50	40	24	12	8	7	6	5	5	6	5	8	10	11	6
Toluene (pounds):	160	75	52	53	46	39	30	24	20	15	12	17	10	10	6
Ethylbenzene (pounds):	52	28	26	18	16	13	10	8	9	11	12	20	15	15	9
Xylenes (pounds):	222	109	112	85	74	62	40	32	37	43	47	68	48	61	37
Cumulative Mass Removed (pounds)															
TOTAL BTEX (pounds):	484	736	950	1118	1262	1383	1468	1538	1610	1685	1764	1877	1956	2054	2111
Benzene (pounds):	50	90	114	126	135	142	147	152	157	163	168	175	185	196	202
Toluene (pounds):	160	235	287	340	386	425	455	479	499	514	525	543	553	563	569
Ethylbenzene (pounds):	52	80	106	124	140	153	163	172	181	192	204	224	238	252	261
Xylenes (pounds):	222	331	443	528	601	663	703	735	773	816	863	931	977	1039	1076

Reporting Period	5/24/06 to 6/29/06	6/29/06 to 7/26/06	7/26/06 to 8/31/06	8/31/06 to 9/28/06	9/28/06 to 10/26/06	10/26/06 to 11/21/06	11/21/06 to 12/28/06	12/28/06 to 1/29/07	1/29/07 to 2/23/07	2/23/07 to 3/28/07	3/28/07 to 4/30/07	4/30/07 to 6/7/07
Averaged Influent Concentrations mg/m^3 (µg/L)[4],												
Average Total BTEX	140	125	100	91	78	81	145	130	87	75	36	13
Average Benzene	15	10	10	7	5	5	5	4	3	3	2	2
Average Toluene	13	14	17	19	15	23	57	53	35	18	9	2
Average Ethylbenzene	18	14	13	12	10	9	13	14	12	11	5	1
Average Xylenes	94	87	67	53	47	54	70	69	47	44	21	8
Averaged Operating Conditions [*]												
Gas Reading (cf)	26700000	29055000	31529000	34210000	36930000	39607000	41600000	43530000	66700000	69214000	101936000	106506000
Gas used (cf)	3490000	2352000	2474000	2681000	2120000	2277000	2999000	1924000	22670000	23014000	12722000	4570000
Gas used per hour (cf/hr)	3150	3082	3276	4157	3766	3609	3443	3318	37783	31831	18359	4594
Temperature	1458	1438	1463	1453	1449	1437	1533	1455	1461	1425	1450	1450
Influent Flow Rate (scfm)	172	223	238	269	282.5	200.3	226	203.5	233.7	231.3	219.0	219.0
System Vacuum (" Water)	42	42	52	56	44	60	50	58	50	52	42	42
Start of Reporting Period:	5/24/2006	6/29/2006	7/26/2006	8/31/2006	9/28/2006	10/26/2006	11/21/2006	12/28/2006	1/29/2007	2/23/2007	3/28/2007	4/30/2007
System Hours:	5958	6749	7387.8	8043	8658	9251	9852	10753	11517	12117	13840	13533
End of Reporting Period:	6/29/2006	7/26/2006	8/31/2006	9/28/2006	10/26/2006	11/21/2006	12/28/2006	1/29/2007	2/23/2007	3/28/2007	4/30/2007	6/7/2007
System Hours:	6749	7387.8	8043	8658	9251	9852	10753	11517	12117	13840	13533	14541
Total Operating Hours:	791.00	638.80	655.20	645.00	593.00	651.00	671.00	764.00	600.00	723.00	693.00	1008.00
Down Time (days):	0	1	9	0.5	0	0.5	1	1	3	0	0	0
Total Operating Time (days):	36.0	26.0	27.0	27.5	26.3	25.5	36.0	31.8	23.0	33.0	29.0	42.0
Percent Operating Time (%):	100	96	67	98	100	98	97	97	91	100	100	100
Average Mass Removal Rates during reporting period (pounds/day)												
Total BTEX (pounds/day):	2.1	2.5	2.3	2.2	1.9	2.0	2.9	2.4	1.8	1.8	0.7	0.3
Benzene (pounds/day):	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0
Toluene (pounds/day):	0.2	0.3	0.4	0.4	0.4	0.5	1.1	1.0	0.6	0.4	0.2	0.0
Ethylbenzene (pounds/day):	0.3	0.3	0.3	0.3	0.2	0.2	0.3	0.3	0.3	0.2	0.1	0.0
Xylenes (pounds/day):	1.4	1.7	1.4	1.3	1.2	1.2	1.4	1.1	1.0	0.9	0.4	0.1
Mass Removed during reporting period (pounds)												
TOTAL BTEX (pounds):	77	65	61	60	54	52	105	74	42	51	21	11
Benzene (pounds):	8	5	6	5	3	3	4	2	1	2	1	2
Toluene (pounds):	7	7	10	12	10	13	41	30	12	13	5	2
Ethylbenzene (pounds):	10	7	7	8	7	5	10	8	6	7	3	1
Xylenes (pounds):	52	45	39	35	33	31	51	35	25	30	12	8
Cumulative Mass Removed (pounds)												
TOTAL BTEX (pounds):	2188	2254	2315	2375	2429	2481	2587	2660	2702	2754	2774	2785
Benzene (pounds):	210	215	222	228	230	233	238	239	240	242	243	244
Toluene (pounds):	575	582	592	604	615	628	669	699	711	724	729	730
Ethylbenzene (pounds):	271	279	286	294	301	306	316	324	329	337	339	341
Xylenes (pounds):	1128	1174	1212	1247	1281	1312	1363	1398	1418	1448	1460	1468

Notes:

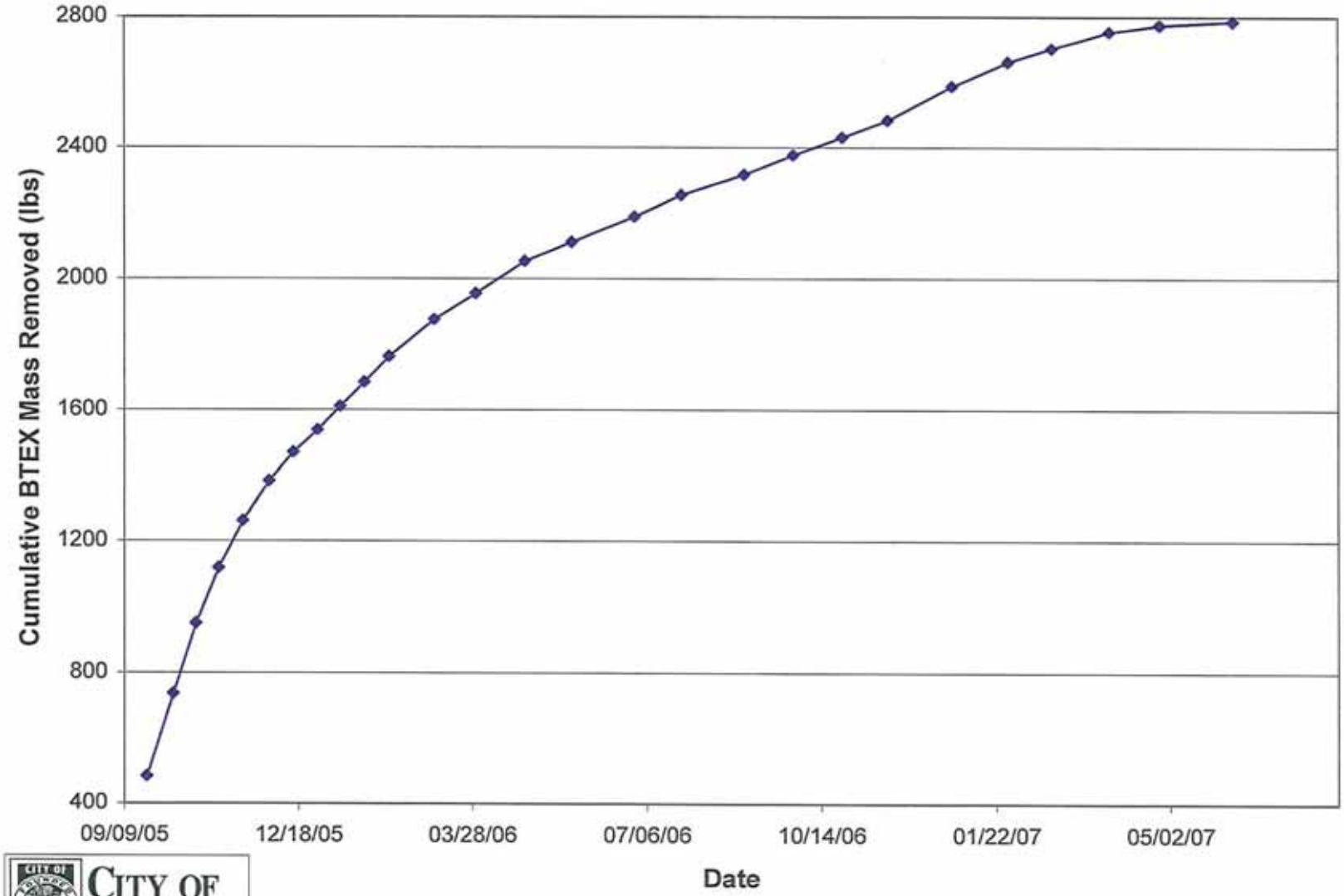
All concentrations are reported in ug/L. (mg/m^3)

System began operation 9/8/05 and ceased operation 6/7/07

* Due to sampling error at the influent, the sample collected from wellhead P-3 was used to determine mass removed during reporting period

* Influent Concentrations and flow rates averaged over the reporting period.

Figure 1
Cumulative BTEX Mass Removed
35 E. Toole Avenue



CITY OF TUCSON

APPENDIX 3D

LABORATORY DATA REPORTS:
SVE AIR MONITORING

TRANSWEST GEOCHEM

December 13, 2005

Nancy Petersen
City of Tucson, Environmental Services
100 N. Stone, 2nd Floor, W. Side
Tucson, AZ 85701

RECEIVED
DEC 16 2005
ENVIRONMENTAL SERVICES
100 N. STONE AVE., 2ND FLOOR

RE: Toole Ave

Work Order No.: 0512005

Dear Nancy,

Transwest Geochem, Inc. received 2 samples on 12/1/2005 10:09:00 AM for the analyses presented in the following report.

The Case Narrative of this report addresses any Quality Control and/or Quality Assurance issues associated with this Work Order.

If you have any questions regarding these test results, please feel free to call us at (602) 437-0330.

Sincerely,

Elizabeth Proffitt

Beth Proffitt
Project Manager

ADHS License No. AZM133/AZ0133

3725 E. Atlanta Ave. • Suite 2 • Phoenix, Arizona 85040 • (602) 437-0330 • 1-800-927-5183 • Fax (602) 437-0660
3860 S. Palo Verde Rd. • Suite 301 • Tucson, Arizona 85714 • (520) 573-1061 • Fax (520) 573-1063

TRANSWEST GEOCHEM

Client: City of Tucson, Environmental Services
Work Order: 0512005
Project Name: Toole Ave
Project Number:

Date Printed: 13-Dec-05

Case Narrative

All method blanks, laboratory spikes, and sample duplicates met quality control objectives for the parameters associated with this Work Order except as detailed below or on the Data Qualifier page of this report. Data Qualifiers used in this report are in accordance with ADEQ Arizona Data Qualifiers, Revision 1.0 05/13/2002.

Data qualifiers ("flags") contained within this analytical report have been issued to explain a quality control deficiency, and do not affect the quality (validity) of the data unless noted otherwise in the case narrative.

The vapor analysis performed by Transwest Geochem, Inc. is a screening technique based on a modified EPA method. This data is not to be used in compliance situations.

3725 E. Atlanta Ave. • Suite 2 • Phoenix, Arizona 85040 • (602) 437-0330 • 1-800-927-5183 • Fax (602) 437-0660
3860 S. Palo Verde Rd. • Suite 301 • Tucson, Arizona 85714 • (520) 573-1061 • Fax (520) 573-

TRANSWEST GEOCHEM

Date Printed 12-Dec-05

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Project Name: Toole Ave
Project Number:
Work Order: 0512005
Date Received: 01-Dec-05

Case Narrative
Data Qualifiers

One or more of the following data qualifiers may be associated with your analytical and/or quality control data.

D1 Sample required dilution due to matrix.

D2 Sample required dilution due to high concentration of target analyte.

TRANSWEST GEOCHEM

Date Printed 12-Dec-05

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Project Name: Toole Ave
Project Number:
Work Order: 0512005
Date Received: 01-Dec-05

Work Order Sample Summary

Client Sample ID	Lab Sample ID	Test Code	Collection Date
Toole-Post Dilution	0512005-01A	8021B/8015B	12/1/2005 9:40:00 AM
Toole-P-3	0512005-02A	8021B/8015B	12/1/2005 9:45:00 AM

TRANSWEST GEOCHEM

Date Printed 12-Dec-05

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Project Name: Toole Ave
Project Number:
Work Order: 0512005
Date Received: 01-Dec-05

Definitions

Analytical Spike (AS)	The AS is a known amount of a target analyte added to a sample after it has been distilled, digested, or extracted and is ready for analysis. The AS is generally performed if the MS has failed. It is used to indicate interference that arises from sample distillation, digestion, or extraction as opposed to interference that is innate to the matrix.
Continuing Curve Verification (CCV)	The CCV is also referred to as a curve check. This is a standard analyzed at specified intervals during an analysis. The CCV verifies the stability and accuracy of the calibration curve. There are specific CCV recovery acceptance criteria for each method.
Dilution Factor (DF)	The DF is an indication of how much a sample had to be diluted in order to quantitate it on a standard curve. The DF is indicated in the reported sample result. The sample PQL increases as the dilution increases.
Internal Standard (IS)	The IS is a compound that is similar to the organic compound of interest in terms of chemical composition but is unique in that it is rare in the environment. The same concentration of IS is added to every sample for some organic methods.
Laboratory Control Sample (LCS)	The LCS is also referred to as a blank spike. The LCS is an addition of a known amount of a target analyte (from the same source as calibration standards or spikes) to an aliquot of deionized water or other appropriate clean matrix. The LCS is processed through the entire method procedure in the same manner as samples.
Matrix Spike (MS)	The MS is a known amount of a target analyte added to a sample. The MS is processed through the entire method procedure in the same manner as samples.
Method Blank (MB)	The MB is an aliquot of deionized water or other appropriate clean matrix that is thought to be free of the analyte in question. The MB is processed through the entire extraction or analysis procedure and is used to indicate contamination in the lab.
Method Detection Limit (MDL)	The MDL is the lowest level of detection of which a method is capable.
Practical Quantitation Limit (PQL)	The PQL is the lowest value at which Transwest Geochem can detect an analyte in matrix with a high degree of confidence. The PQL will increase as the DF increases. The PQL is greater than or equal to the MDL.
Relative Percent Difference (RPD)	The RPD is a measure of precision (the ability to obtain the same result on re-analysis of the same sample). It is calculated using the result of a sample, MS, LCS, or LCSV and its associated duplicate result.
Secondary Source QC Sample (LCSV)	The LCSV is also referred to as a second source laboratory control sample. It is the same type of standard as a calibration or spiking standard but is obtained from a different source. The LCSV is an indication of the primary standard quality, method performance, and instrument performance.
Surrogate	A surrogate compound is similar to the organic compound of interest in terms of chemical composition but is unique in that it is rare in the environment. When surrogates are used, they are added to every sample, blank and standard. Surrogate recovery is used as an indication of extraction and/or analytical success.
Trip Blank (TB)	The TB is a portion of deionized water preserved in the same manner as the samples. The TB travels from the lab, to the field, and then back to the lab with the samples from the field. The TB serves as an indication of contamination introduced during sample transportation.

TRANSWEST GEOCHEM

Date Printed 12-Dec-05

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Project Name: Toole Ave
Project Number:
Work Order: 0512005
Date Received: 01-Dec-05

References

Transwest Geochem, Inc. uses the methods outlined in the following references:

Code of Federal Regulations, 40CFR, Part 136, Appendix A, 1998.

Standard Methods for the Examination of Water and Wastewater, 19th Edition, 1995.

Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Revised March 1983.

Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, Revised August 1993.

Methods for the Determination of Metals in Environmental Samples, Supplement 1: EPA/600/R-94/111, Revised May 1994.

Methods for the Determination of Organic Compounds in Drinking Water, EPA/600/4-88/039, Revised July, 1991; EPA-600/4-90/020, Supplement I, July 1990; EPA-600/R-92/129; Supplement II, August 1992; EPA-600/R-95/131, Supplement III, August 1995.

Hach, Water Analysis Handbook, 3rd Edition, 1997.

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition, 1986 including Update I, July 1992; Update IIA, August 1993; Update II; September 1994; Update IIB, January 1995; Update III, December 1996

Bureau of Laboratory Services, State of Arizona Department of Health Services Method 418.1AZ: TPH in Soil, September 1994.

Bureau of Laboratory Services, State of Arizona Department of Health Services Method 8015AZ.R1, September 1998. (Comment: C6-C10 GRO reported by this method is not to be used in compliance situations)

ASTM MethodD4982, Annual Book of ASTM Standards, Volumes 11.01 and 11.02, 1995

The Determination of Polychlorinated Biphenyls in Transformer Fluid and Waste Oils, EPA-600 4-81-045, September 1982.

TRANSWEST GEOCHEM

Date Printed 12-Dec-05

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0512005
Lab ID: 0512005-01
Project Name: Toole Ave
Project Number:

Client Sample ID: Toole-Post Dilution
Collection Date: 12/1/2005 9:40:00 AM
Matrix: Soil Vapor

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene	**17**	2.5	D1	mg/m³	5.0	8021B/8015B	N/A	12/2/05	MO	ML2051202
Benzene-ppmv	**5.48**	0.80	D1	ppmv	5.00	8021B/8015B	N/A	12/2/05	MO	ML2051202B
Toluene	**99**	5.0	D2	mg/m³	5.0	8021B/8015B	N/A	12/2/05	MO	ML2051202
Toluene-ppmv	**26.36**	1.35	D2	ppmv	5.00	8021B/8015B	N/A	12/2/05	MO	ML2051202B
Ethylbenzene	**33**	5.0	D1	mg/m³	5.0	8021B/8015B	N/A	12/2/05	MO	ML2051202
Ethylbenzene-ppmv	**7.64**	1.15	D1	ppmv	5.00	8021B/8015B	N/A	12/2/05	MO	ML2051202B
Xylenes, total	**150**	7.5	D1	mg/m³	5.0	8021B/8015B	N/A	12/2/05	MO	ML2051202
Xylenes, total-ppmv	**33.61**	1.75	D1	ppmv	5.00	8021B/8015B	N/A	12/2/05	MO	ML2051202B
TVFHC (C6-C10)	**3700**	500	D2	mg/m³	5.0	8021B/8015B	N/A	12/2/05	MO	ML2051202
TVFHC (C6-C10)-ppmv	**897.67**	120.00	D2	ppmv	5.00	8021B/8015B	N/A	12/2/05	MO	ML2051202B
Bromofluorobenzene(Surrogate)	88	61-135		%REC	5.0	8021B/8015B	N/A	12/2/05	MO	ML2051202

TRANSWEST GEOCHEM

Date Printed 12-Dec-05

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0512005
Lab ID: 0512005-02
Project Name: Toole Ave
Project Number:

Client Sample ID: Toole-P-3
Collection Date: 12/1/2005 9:45:00 AM
Matrix: Soil Vapor

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene	<0.50	0.50		mg/m³	1.0	8021B/8015B	N/A	12/2/05	MO	ML2051202
Benzene-ppmv	<0.16	0.16		ppmv	1.00	8021B/8015B	N/A	12/2/05	MO	ML2051202B
Toluene	**2.4**	1.0		mg/m³	1.0	8021B/8015B	N/A	12/2/05	MO	ML2051202
Toluene-ppmv	**0.64**	0.27		ppmv	1.00	8021B/8015B	N/A	12/2/05	MO	ML2051202B
Ethylbenzene	**2.0**	1.0		mg/m³	1.0	8021B/8015B	N/A	12/2/05	MO	ML2051202
Ethylbenzene-ppmv	**0.46**	0.23		ppmv	1.00	8021B/8015B	N/A	12/2/05	MO	ML2051202B
Xylenes, total	**12**	1.5		mg/m³	1.0	8021B/8015B	N/A	12/2/05	MO	ML2051202
Xylenes, total-ppmv	**2.85**	0.35		ppmv	1.00	8021B/8015B	N/A	12/2/05	MO	ML2051202B
TVFHC (C6-C10)	**140**	100		mg/m³	1.0	8021B/8015B	N/A	12/2/05	MO	ML2051202
TVFHC (C6-C10)-ppmv	**34.65**	24.00		ppmv	1.00	8021B/8015B	N/A	12/2/05	MO	ML2051202B
Bromofluorobenzene(Surrogate)	93	61-135		%REC	1.0	8021B/8015B	N/A	12/2/05	MO	ML2051202

TRANSWEST GEOCHEM

Date: 12-Dec-05

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0512005
Project: Toole Ave

QC SUMMARY REPORT

Method Blank

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene-ppmv	<0.16	0.16		ppmv	1	8021B/8015B	N/A	12/2/05	MO	ML2051202B
Toluene-ppmv	<0.27	0.27		ppmv	1	8021B/8015B	N/A	12/2/05	MO	ML2051202B
Ethylbenzene-ppmv	<0.23	0.23		ppmv	1	8021B/8015B	N/A	12/2/05	MO	ML2051202B
Xylenes, total-ppmv	<0.35	0.35		ppmv	1	8021B/8015B	N/A	12/2/05	MO	ML2051202B
TVFHC (C6-C10)-ppmv	<24.00	24.00		ppmv	1	8021B/8015B	N/A	12/2/05	MO	ML2051202B
Benzene	<0.50	0.50		mg/m³	1	8021B/8015B	N/A	12/2/05	MO	ML2051202
Toluene	<1.0	1.0		mg/m³	1	8021B/8015B	N/A	12/2/05	MO	ML2051202
Ethylbenzene	<1.0	1.0		mg/m³	1	8021B/8015B	N/A	12/2/05	MO	ML2051202
Xylenes, total	<1.5	1.5		mg/m³	1	8021B/8015B	N/A	12/2/05	MO	ML2051202
TVFHC (C6-C10)	<100	100		mg/m³	1	8021B/8015B	N/A	12/2/05	MO	ML2051202
Bromofluorobenzene	88	61-135		%REC	1	8021B/8015B	N/A	12/2/05	MO	ML2051202

TRANSWEST GEOCHEM

Date: 12-Dec-05

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0512005
Project: Toole Ave

QC SUMMARY REPORT

Sample Duplicate

Sample ID: **0512005-01AD** Batch ID: ML2051202
Client ID: **Toole-Post Dilution**

Analyte	Result	PQL	Units	RPD Ref Val	% RPD	RPD Limit	Test Code	Date Prepared	Date Analyzed	Analyst	Qual
Benzene	16.75	2.5	mg/m³	17.48	4%	30	8021B/8015B	N/A	12/2/05	MO	
Toluene	99.66	5.0	mg/m³	99.20	0%	30	8021B/8015B	N/A	12/2/05	MO	
Ethylbenzene	32.85	5.0	mg/m³	33.11	1%	30	8021B/8015B	N/A	12/2/05	MO	
Xylenes, total	147.78	7.5	mg/m³	145.7	1%	30	8021B/8015B	N/A	12/2/05	MO	
TVFHC (C6-C10)	3686	500	mg/m³	3671	0%	30	8021B/8015B	N/A	12/2/05	MO	

TRANSWEST GEOCHEM

Date: 12-Dec-05

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0512005
Project: Toole Ave

QC SUMMARY REPORT

Blank Spike

Analyte	Result	PQL	SPK value	SPK Ref Val	% Rec	Low Limit	High Limit	RPD Ref Val	% RPD	RPD Limit	Qual
Sample ID: **LCS 12/2/05**	Batch ID: ML2051202			Test Code: 8021B/8015B				Date Analyzed: 12/02/05 00:00			
				Units mg/m³				Date Prepared: N/A			
Benzene	5.100	0.50	5.000		102%	70	130				
Toluene	5.200	1.0	5.000		104%	70	130				
Ethylbenzene	4.600	1.0	5.000		92%	70	130				
Xylenes, total	13.865	1.5	15.00		92%	70	130				
TVFHC (C6-C10)	242.7	100	250.0		97%	70	130				
Bromofluorobenzene	9.000	0.50	10.00		90%	61	135				

TRANSWEST GEOCHEM

Sample Receipt Checklist

Client Name: Tucson

Date and Time Received: 12/1/05 1600

Work Order Number: OS12005

Checked by SH

Checklist completed by: [signature] 12/1/05
Signature / Date

Logged In by: SH 12/1/05
Initials / Date

Matrix: Vapor Carrier Name: Client KQ Express 17

Reviewed by: [initials] 12/2/05
Initials / Date

				COMMENTS
Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑	
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	Temp: Ambient	Sampled < 2hrs ☐
Water – VOA vials have zero headspace?	Yes ☐	No ☐	N/A ☑	
Water – pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	
Water – Sulfides present in Cyanide samples?	Yes ☐	No ☐	N/A ☑	

Adjusted ? N/A Checked by: N/A

Client contacted: 12/2 Date contacted: _____ Person contacted: _____

Contacted by: _____ Regarding: _____

left Molly V-mail to see if she needs lower Reporting limits Ep

Corrective Action: _____

TRANSWEST GEOCHEM

Sample Receipt Checklist

Client Name: City of Tucson - Env. SVCs Date and Time Received: 12/1/05 10:09

Work Order Number: 0512005 Received by: Kerri Collins

Checklist completed by: Kerri Collins 12/1/05 Logged In by: _____
Signature / Date Initials / Date

Matrix: Air Carrier Name: Client Reviewed by: EP 12/2/05
Initials / Date

				COMMENTS
Shipping container/cooler in good condition?	Yes ☐	No ☐	Not Present ☒	
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☒	
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☒	
Chain of custody present?	Yes ☒	No ☐		
Chain of custody signed when relinquished and received?	Yes ☒	No ☐		
Chain of custody agrees with sample labels?	Yes ☒	No ☐		
Samples in proper container/bottle?	Yes ☒	No ☐	N/A ☐	
Sample containers intact?	Yes ☒	No ☐		
Sufficient sample volume for indicated test?	Yes ☒	No ☐		
All samples received within holding time?	Yes ☒	No ☐		
Container/Temp Blank temperature in compliance?	Yes ☒	No ☐	Temp: 20.6°C → Tedlar bags	
Water – VOA vials have zero headspace?	Yes ☐	No ☐	N/A ☒	
Water – pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☒	
Water – Sulfides present in Cyanide samples?	Yes ☐	No ☐	N/A ☒	

Adjusted ? _____ Checked by: _____

Client contacted: _____ Date contacted: _____ Person contacted: _____

Contacted by: _____ Regarding: _____

Corrective Action: _____

TRANSWEST GEOCHEM

3725 E. Atlanta Ave., Ste 2
Phoenix, Arizona 85040
Phone: (602) 437-0330
Fax: (602) 437-0660

3860 S. Palo Verde Rd., Ste. 301
Tucson, Arizona 85714
Phone: (520) 573-1061
Fax: (520) 573-1063

Chain of Custody

TGI Work Order No: 0512005

Date 12/1/05 Page 1 of 1

Project Manager:	Molly Collins
Client Name:	City of Tucson Environmental Services
Address:	
City, State ZIP:	
Phone:	Fax:

Bill to:	
Company:	COT-ES
Address:	
City, State ZIP:	
Phone:	Fax:

P.O. No.:	
Project Name:	Toole Ave
Project Number:	

SAMPLE RECEIPT

Temperature:	NA 20.6°C	Ice:	
Received Intact:	(Yes) No N/A	(Absent) / Present	
Custody Seals:	Yes (No) N/A	Wet / Blue	
Total No. of Containers:	2		

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Lab ID	No. of Containers	TPH, 8015AZR.1	BTEX (8021B)	Volatile Organics GCMS (624/8260AZ)	SDWA Volatiles, (524.2)	Semi-Volatile Organics GCMS (625/8270)	Organochlorine Pesticides (608/8081)	PCB's, (8082)	PAH, EPA 8310	8 RCRA Metals	Comments
Toole-Postdilution	VA	12/1 2005	0940	01	1	X	X								
Toole-P-3	"	"	0945	02	1	X	X								

Relinquished by: (Signature)	(Print Name)	Received by: (Signature)	(Print Name)	Date/Time
1 Matt Wallace	Matt Wallace	Kerri Collins	Kerri Collins	12/1/05 10:09
2 Kerri Collins	Kerri Collins		Express IT	12/1/05 10:30
3	Express IT		Sky Harden	12/1/05 1600

6 Ambient

White copy to TGI, Yellow copy for final report, Pink copy to sampler

Revised : 7/21/2004

TRANSWEST GEOCHEM

December 05, 2005

Nancy Petersen
City of Tucson, Environmental Services
100 N. Stone, 2nd Floor, W. Side
Tucson, AZ 85701

RECEIVED
DEC 09 2005
ENVIRONMENTAL SERVICES
100 N. STONE AVE., 2ND FLOOR

RE:

Work Order No.: 0511301

Dear Nancy,

Transwest Geochem, Inc. received 4 samples on 11/16/2005 9:50:00 AM for the analyses presented in the following report.

The Case Narrative of this report addresses any Quality Control and/or Quality Assurance issues associated with this Work Order.

If you have any questions regarding these test results, please feel free to call us at (602) 437-0330.

Sincerely,

Elizabeth Proffitt

Beth Proffitt
Project Manager

ADHS License No. AZM133/AZ0133

3725 E. Atlanta Ave. • Suite 2 • Phoenix, Arizona 85040 • (602) 437-0330 • 1-800-927-5183 • Fax (602) 437-0660
3860 S. Palo Verde Rd. • Suite 301 • Tucson, Arizona 85714 • (520) 573-1061 • Fax (520) 573-1063

TRANSWEST GEOCHEM

Client: City of Tucson, Environmental Services
Work Order: 0511301
Project Name:
Project Number:

Date Printed: 05-Dec-05

Case Narrative

All method blanks, laboratory spikes, and/or matrix spikes met quality control objectives for the parameters associated with this Work Order except as detailed below or on the Data Qualifier page of this report. Data Qualifiers used in this report are in accordance with ADEQ Arizona Data Qualifiers, Revision 2.0 11/26/2003.

Data qualifiers ("flags") contained within this analytical report have been issued to explain a quality control deficiency, and do not affect the quality (validity) of the data unless noted otherwise in the case narrative.

The vapor analysis performed by Transwest Geochem, Inc. is a non-compliance screening method based on a modified EPA method.

Samples Toole-PD and Toole-P3 went flat before analyses could take place.

3725 E. Atlanta Ave. • Suite 2 • Phoenix, Arizona 85040 • (602) 437-0330 • 1-800-927-5183 • Fax (602) 437-0660
3860 S. Palo Verde Rd. • Suite 301 • Tucson, Arizona 85714 • (520) 573-1061 • Fax (520)

Date Printed 05-Dec-05

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services

Project Name:

Project Number:

Work Order: 0511301

Date Received: 16-Nov-05

Case Narrative
Data Qualifiers

One or more of the following data qualifiers may be associated with your analytical and/or quality control data.

D1 Sample required dilution due to matrix.

D2 Sample required dilution due to high concentration of target analyte.

TRANSWEST GEOCHEM

Date Printed 05-Dec-05

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services

Project Name:

Project Number:

Work Order: 0511301

Date Received: 16-Nov-05

Work Order Sample Summary

Client Sample ID	Lab Sample ID	Test Code	Collection Date
Toole - Inf	0511301-02A	8021B/8015B	11/16/2005 8:40:00 AM
Toole - Eff	0511301-04A	8021B/8015B	11/16/2005 8:50:00 AM

Date Printed 05-Dec-05

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services

Project Name:

Project Number:

Work Order: 0511301

Date Received: 16-Nov-05

Definitions

Analytical Spike (AS)	The AS is a known amount of a target analyte added to a sample after it has been distilled, digested, or extracted and is ready for analysis. The AS is generally performed if the MS has failed. It is used to indicate interference that arises from sample distillation, digestion, or extraction as opposed to interference that is innate to the matrix.
Continuing Curve Verification (CCV)	The CCV is also referred to as a curve check. This is a standard analyzed at specified intervals during an analysis. The CCV verifies the stability and accuracy of the calibration curve. There are specific CCV recovery acceptance criteria for each method.
Dilution Factor (DF)	The DF is an indication of how much a sample had to be diluted in order to quantitate it on a standard curve. The DF is indicated in the reported sample result. The sample PQL increases as the dilution increases.
Internal Standard (IS)	The IS is a compound that is similar to the organic compound of interest in terms of chemical composition but is unique in that it is rare in the environment. The same concentration of IS is added to every sample for some organic methods.
Laboratory Control Sample (LCS)	The LCS is also referred to as a blank spike. The LCS is an addition of a known amount of a target analyte (from the same source as calibration standards or spikes) to an aliquot of deionized water or other appropriate clean matrix. The LCS is processed through the entire method procedure in the same manner as samples.
Matrix Spike (MS)	The MS is a known amount of a target analyte added to a sample. The MS is processed through the entire method procedure in the same manner as samples.
Method Blank (MB)	The MB is an aliquot of deionized water or other appropriate clean matrix that is thought to be free of the analyte in question. The MB is processed through the entire extraction or analysis procedure and is used to indicate contamination in the lab.
Method Detection Limit (MDL)	The MDL is the lowest level of detection of which a method is capable.
Practical Quantitation Limit (PQL)	The PQL is the lowest value at which Transwest Geochem can detect an analyte in matrix with a high degree of confidence. The PQL will increase as the DF increases. The PQL is greater than or equal to the MDL.
Relative Percent Difference (RPD)	The RPD is a measure of precision (the ability to obtain the same result on re-analysis of the same sample). It is calculated using the result of a sample, MS, LCS, or LCSV and its associated duplicate result.
Secondary Source QC Sample (LCSV)	The LCSV is also referred to as a second source laboratory control sample. It is the same type of standard as a calibration or spiking standard but is obtained from a different source. The LCSV is an indication of the primary standard quality, method performance, and instrument performance.
Surrogate	A surrogate compound is similar to the organic compound of interest in terms of chemical composition but is unique in that it is rare in the environment. When surrogates are used, they are added to every sample, blank and standard. Surrogate recovery is used as an indication of extraction and/or analytical success.
Trip Blank (TB)	The TB is a portion of deionized water preserved in the same manner as the samples. The TB travels from the lab, to the field, and then back to the lab with the samples from the field. The TB serves as an indication of contamination introduced during sample transportation.

Date Printed 05-Dec-05

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Project Name:
Project Number:
Work Order: 0511301
Date Received: 16-Nov-05

References

Transwest Geochem, Inc. uses the methods outlined in the following references:

Code of Federal Regulations, 40CFR, Part 136, Appendix A, 1998.

Standard Methods for the Examination of Water and Wastewater, 19th Edition, 1995.

Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Revised March 1983.

Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, Revised August 1993.

Methods for the Determination of Metals in Environmental Samples, Supplement 1: EPA/600/R-94/111, Revised May 1994.

Methods for the Determination of Organic Compounds in Drinking Water, EPA/600/4-88/039, Revised July, 1991; EPA-600/4-90/020, Supplement I, July 1990; EPA-600/R-92/129; Supplement II, August 1992; EPA-600/R-95/131, Supplement III, August 1995.

Hach, Water Analysis Handbook, 3rd Edition, 1997.

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition, 1986 including Update I, July 1992; Update IIA, August 1993; Update II; September 1994; Update IIB, January 1995; Update III, December 1996

Bureau of Laboratory Services, State of Arizona Department of Health Services Method 418.1AZ: TPH in Soil, September 1994.

Bureau of Laboratory Services, State of Arizona Department of Health Services Method 8015AZ.R1, September 1998. (Comment: C6-C10 GRO reported by this method is not to be used in compliance situations)

ASTM MethodD4982, Annual Book of ASTM Standards, Volumes 11.01 and 11.02, 1995

The Determination of Polychlorinated Biphenyls in Transformer Fluid and Waste Oils, EPA-600 4-81-045, September 1982.

TRANSWEST GEOCHEM

Date Printed 05-Dec-05

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0511301
Lab ID: 0511301-02
Project Name:
Project Number:

Client Sample ID: Toole - Inf
Collection Date: 11/16/2005 8:40:00 AM
Matrix: Air

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene	**26**	2.5	D1	mg/m³	5.0	8021B/8015B	N/A	11/17/05	MO	ML2051117
Benzene-ppmv	**8.30**	0.80	D1	ppmv	5.00	8021B/8015B	N/A	11/17/05	MO	ML2051117B
Toluene	**140**	5.0	D2	mg/m³	5.0	8021B/8015B	N/A	11/17/05	MO	ML2051117
Toluene-ppmv	**38.17**	1.35	D2	ppmv	5.00	8021B/8015B	N/A	11/17/05	MO	ML2051117B
Ethylbenzene	**49**	5.0	D1	mg/m³	5.0	8021B/8015B	N/A	11/17/05	MO	ML2051117
Ethylbenzene-ppmv	**11.33**	1.15	D1	ppmv	5.00	8021B/8015B	N/A	11/17/05	MO	ML2051117B
Xylenes, total	**230**	7.5	D2	mg/m³	5.0	8021B/8015B	N/A	11/17/05	MO	ML2051117
Xylenes, total-ppmv	**53.76**	1.75	D2	ppmv	5.00	8021B/8015B	N/A	11/17/05	MO	ML2051117B
TVFHC (C6-C10)	**5600**	1000	D2	mg/m³	10	8021B/8015B	N/A	11/17/05	MO	ML2051117
TVFHC (C6-C10)-ppmv	**1357.4**	240.00	D2	ppmv	10.00	8021B/8015B	N/A	11/17/05	MO	ML2051117B
Bromofluorobenzene(Surrogate)	82	61-135		%REC	5.0	8021B/8015B	N/A	11/17/05	MO	ML2051117

TRANSWEST GEOCHEM

Date Printed 05-Dec-05

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0511301
Lab ID: 0511301-04
Project Name:
Project Number:

Client Sample ID: Toole - Eff
Collection Date: 11/16/2005 8:50:00 AM
Matrix: Air

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene	<0.50	0.50		mg/m³	1.0	8021B/8015B	N/A	11/17/05	MO	ML2051117
Benzene-ppmv	<0.16	0.16		ppmv	1.00	8021B/8015B	N/A	11/17/05	MO	ML2051117B
Toluene	<1.0	1.0		mg/m³	1.0	8021B/8015B	N/A	11/17/05	MO	ML2051117
Toluene-ppmv	<0.27	0.27		ppmv	1.00	8021B/8015B	N/A	11/17/05	MO	ML2051117B
Ethylbenzene	<1.0	1.0		mg/m³	1.0	8021B/8015B	N/A	11/17/05	MO	ML2051117
Ethylbenzene-ppmv	<0.23	0.23		ppmv	1.00	8021B/8015B	N/A	11/17/05	MO	ML2051117B
Xylenes, total	<1.5	1.5		mg/m³	1.0	8021B/8015B	N/A	11/17/05	MO	ML2051117
Xylenes, total-ppmv	<0.35	0.35		ppmv	1.00	8021B/8015B	N/A	11/17/05	MO	ML2051117B
TVFHC (C6-C10)	<100	100		mg/m³	1.0	8021B/8015B	N/A	11/17/05	MO	ML2051117
TVFHC (C6-C10)-ppmv	<24.00	24.00		ppmv	1.00	8021B/8015B	N/A	11/17/05	MO	ML2051117B
Bromofluorobenzene(Surrogate)	94	61-135		%REC	1.0	8021B/8015B	N/A	11/17/05	MO	ML2051117

Date: 05-Dec-05

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services

Work Order: 0511301

Project:

QC SUMMARY REPORT

Method Blank

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene-ppmv	<0.16	0.16		ppmv	1	8021B/8015B	N/A	11/17/05	MO	ML2051117B
Toluene-ppmv	<0.27	0.27		ppmv	1	8021B/8015B	N/A	11/17/05	MO	ML2051117B
Ethylbenzene-ppmv	<0.23	0.23		ppmv	1	8021B/8015B	N/A	11/17/05	MO	ML2051117B
Xylenes, total-ppmv	<0.35	0.35		ppmv	1	8021B/8015B	N/A	11/17/05	MO	ML2051117B
TVFHC (C6-C10)-ppmv	<24.00	24.00		ppmv	1	8021B/8015B	N/A	11/17/05	MO	ML2051117B
Benzene	<0.50	0.50		mg/m³	1	8021B/8015B	N/A	11/17/05	MO	ML2051117
Toluene	<1.0	1.0		mg/m³	1	8021B/8015B	N/A	11/17/05	MO	ML2051117
Ethylbenzene	<1.0	1.0		mg/m³	1	8021B/8015B	N/A	11/17/05	MO	ML2051117
Xylenes, total	<1.5	1.5		mg/m³	1	8021B/8015B	N/A	11/17/05	MO	ML2051117
TVFHC (C6-C10)	<100	100		mg/m³	1	8021B/8015B	N/A	11/17/05	MO	ML2051117
Bromofluorobenzene	86	61-135		%REC	1	8021B/8015B	N/A	11/17/05	MO	ML2051117

TRANSWEST GEOCHEM

Date: 05-Dec-05

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services

Work Order: 0511301

Project:

QC SUMMARY REPORT

Sample Duplicate

Analyte	Result	PQL	Units	RPD Ref Val	% RPD	RPD Limit	Test Code	Date Prepared	Date Analyzed	Analyst	Qual
Sample ID: **0511328-01AD**		Batch ID:	ML2051117								
Client ID:											
Benzene	1.200	0.50	mg/m³	1.000	18%	30	8021B/8015B	N/A	11/17/05	MO	
Toluene	<1.0	1.0	mg/m³	<1.0	0%	30	8021B/8015B	N/A	11/17/05	MO	
Ethylbenzene	<1.0	1.0	mg/m³	<1.0	0%	30	8021B/8015B	N/A	11/17/05	MO	
Xylenes, total	<1.5	1.5	mg/m³	<1.5	0%	30	8021B/8015B	N/A	11/17/05	MO	
TVFHC (C6-C10)	147.5	100	mg/m³	140.1	5%	30	8021B/8015B	N/A	11/17/05	MO	
Sample ID: **0511330-01AD**		Batch ID:	ML2051117								
Client ID:											
Benzene	16.64	2.5	mg/m³	15.02	10%	30	8021B/8015B	N/A	11/17/05	MO	
Toluene	121.2	5.0	mg/m³	122.2	1%	30	8021B/8015B	N/A	11/17/05	MO	
Ethylbenzene	40.12	5.0	mg/m³	39.11	3%	30	8021B/8015B	N/A	11/17/05	MO	
Xylenes, total	250.78	7.5	mg/m³	250.4	0%	30	8021B/8015B	N/A	11/17/05	MO	
TVFHC (C6-C10)	2877	500	mg/m³	2816	2%	30	8021B/8015B	N/A	11/17/05	MO	

Date: 05-Dec-05

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0511301
Project:

QC SUMMARY REPORT

Blank Spike

Analyte	Result	PQL	SPK value	SPK Ref Val	% Rec	Low Limit	High Limit	RPD Ref Val	% RPD	RPD Limit	Qual
Sample ID: **LCS 11/17/05**	Batch ID: ML2051117			Test Code: 8021B/8015B				Date Analyzed: 11/17/05 00:00			
				Units: mg/m³				Date Prepared: N/A			
Benzene	4.900	0.50	5.000		98%	70	130				
Toluene	5.000	1.0	5.000		100%	70	130				
Ethylbenzene	4.600	1.0	5.000		92%	70	130				
Xylenes, total	13.251	1.5	15.00		88%	70	130				
TVFHC (C6-C10)	228.0	100	250.0		91%	70	130				
Bromofluorobenzene	8.800	0.50	10.00		88%	61	135				

TRANSWEST GEOCHEM

Sample Receipt Checklist

Client Name: Tucson

Date and Time Received: 11/16/05 1515

Work Order Number: 0511301

Checked by: cc

Checklist completed by: Carey L. Cole 11/16/05
Signature / Date

Logged In by: SJA 11/16/05
Initials / Date

Matrix: Air Carrier Name: Client KQ Express It

Reviewed by: SJA 11/17
Initials / Date

				COMMENTS
Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑	
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	Temp: AMB	Sampled < 2hrs ☐
Water – VOA vials have zero headspace?	Yes ☐	No ☐	N/A ☑	
Water – pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	
Water – Sulfides present in Cyanide samples?	Yes ☐	No ☐	N/A ☑	

Adjusted ? NA Checked by: NA

Client contacted: _____ Date contacted: _____ Person contacted: _____

Contacted by: _____ Regarding: _____

orrective Action: _____

GEOCHEM

Sample Receipt Checklist

Client Name: City of Tucson - E.S.

Date and Time Received: 11/16/05 09:50

Work Order Number: 0511301

Received by: Keith Konola

Checklist completed by: Keith K. 11/16/05
Signature / Date

Logged In by: _____
Initials / Date

Matrix: Air

Carrier Name: Verdad

Reviewed by: _____
Initials / Date

				COMMENTS
Shipping container/cooler in good condition?	Yes ☐	No ☐	Not Present ☑	
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑	
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐	N/A ☐	
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	Temp: 22.2° C → Tedlar Bags	
Water – VOA vials have zero headspace?	Yes ☐	No ☐	N/A ☑	
Water – pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	
Water – Sulfides present in Cyanide samples?	Yes ☐	No ☐	N/A ☑	

Adjusted ? _____ Checked by: _____

Client contacted: _____ Date contacted: _____ Person contacted: _____

Contacted by: _____ Regarding: _____

Corrective Action: _____

TRANSWEST GEOCHEM
3725 E. Atlanta Ave., Ste 2
Phoenix, Arizona 85040
Phone: (602) 437-0330
Fax: (602) 437-0660

3860 S. Palo Verde Rd., Ste. 301
Tucson, Arizona 85714
Phone: (520) 573-1061
Fax: (520) 573-1063

Chain of Custody

TGI Work Order No: 0511301
Date 11/16/05 Page 1 of 1

Project Manager:	Molly Collins
Client Name:	COT - ENV. SVCS
Address:	
City, State ZIP:	
Phone:	791-5414 Fax: 5417

Bill to:	COT - ENV
Company:	
Address:	
City, State ZIP:	
Phone:	Fax:

P.O. No.:	
Project Name:	
Project Number:	

SAMPLE RECEIPT

Temperature:	22.2°C	Ice:
Received Intact:	Yes No N/A	Absent / Present
Custody Seals:	Yes No N/A	Wet / Blue
Total No. of Containers:	4	

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Lab ID	No. of Containers	TPH, 8015AZR.1	BTEX (8021B)	Volatile Organics GCMS (624/8260AZ)	SDWA Volatiles, (524.2)	Semi-Volatile Organics GCMS (625/8270)	Organochlorine Pesticides (608/8081)	PCB's, (8082)	PAH, EPA 8310	8 RCRA Metals	Comments
Toole - P3	Air	11/16	0835	01	1	X	X								
Toole - INF	Air	11/16	0840	02	1	X	X								
Toole - PD	Air	11/16	0845	03	1	X	X								
Toole - EFF	Air	11/16	0850	04	1	X	X								

	Relinquished by: (Signature)	(Print Name)	Received by: (Signature)	(Print Name)	Date/Time
1	[signature]	Geno Fousher	Keith Konola	Keith Konola	11/16/05 09:50
2	Keith Konola	Keith Konola		Express It	11/16/05 10:00
3		Express It	Carey L. Cole	Carey L Cole 9NB	11/16/05 1515

White copy to TGI, Yellow copy for final report, Pink copy to sampler

Revised: 7/21/2004

TRANSWEST GEOCHEM

November 30, 2006

Alison Jones
City of Tucson, Environmental Services
100 N. Stone, 2nd Floor, W. Side
Tucson, AZ 85701

RE: Toole

Work Order No.: 0611382

Dear Alison,

Transwest Geochem, Inc. received 2 samples on 11/21/06. The results of the analyses are presented in the following report.

The Case Narrative of this report addresses any Quality Control and/or Quality Assurance issues associated with this Work Order.

If you have any questions regarding these test results, please feel free to call us at (602) 437-0330.

Sincerely,

Matt Hill
Project Manager

ADHS License No. AZM133/AZ0133

3725 E. Atlanta Avenue • Phoenix, Arizona 85040 • (602) 437-0330 • (800) 927-5183 • Fax (602) 437-0660
3860 S. Palo Verde Rd. • Suite 301 • Tucson, Arizona 85714 • (520) 573-1061 • Fax (520) 573-1063
100% Recycled

TRANSWEST GEOCHEM

Client: City of Tucson, Environmental Services
Work Order: 0611382
Project Name: Toole
Project Number:

Date Printed: 30-Nov-06

Case Narrative

All method blanks, laboratory spikes, and/or matrix spikes met quality control objectives for the parameters associated with this Work Order except as detailed below or on the Data Qualifier page of this report. Data Qualifiers used in this report are in accordance with ADEQ Arizona Data Qualifiers, Revision 2.0 11/26/2003.

Data qualifiers ("flags") contained within this analytical report have been issued to explain a quality control deficiency, and do not affect the quality (validity) of the data unless noted otherwise in the case narrative.

3725 E. Atlanta Avenue • Phoenix, Arizona 85040 • (602) 437-0330 • (800) 927-5183 • Fax (602) 437-0660
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License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Project Name: Toole
Project Number:
Work Order: 0611382
Date Received: 21-Nov-06

Case Narrative
Data Qualifiers

One or more of the following data qualifiers may be associated with your analytical and/or quality control data.

D1	Sample required dilution due to matrix.
D2	Sample required dilution due to high concentration of target analyte.

TRANSWEST GEOCHEM

Date Printed 30-Nov-06
License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Project Name: Toole
Project Number:
Work Order: 0611382

Work Order Sample Summary

Client Sample ID	Lab Sample ID	Test Code	Collection Date	Date Received
Toole-EFF-112106	0611382-01A	8021B/8015B	11/21/06 07:00 AM	11/21/06 07:42 AM
Toole-IN-112106	0611382-02A	8021B/8015B	11/21/06 07:05 AM	11/21/06 07:42 AM

Date Printed 30-Nov-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services

Project Name: Toole

Project Number:

Work Order: 0611382

Date Received: 21-Nov-06

Definitions

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Trip Blank (TB)	The TB is a portion of deionized water preserved in the same manner as the samples. The TB travels from the lab, to the field, and then back to the lab with the samples from the field. The TB serves as an indication of contamination introduced during sample transportation.

CLIENT: City of Tucson, Environmental Services
Project Name: Toole
Project Number:
Work Order: 0611382
Date Received: 21-Nov-06

References

Transwest Geochem, Inc. uses the methods outlined in the following references:

Code of Federal Regulations, 40CFR, Part 136, Appendix A, 1998.

Standard Methods for the Examination of Water and Wastewater, 19th Edition, 1995.

Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Revised March 1983.

Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, Revised August 1993.

Methods for the Determination of Metals in Environmental Samples, Supplement 1: EPA/600/R-94/111, Revised May 1994.

Methods for the Determination of Organic Compounds in Drinking Water, EPA/600/4-88/039, Revised July, 1991; EPA-600/4-90/020, Supplement I, July 1990; EPA-600/R-92/129; Supplement II, August 1992; EPA-600/R-95/131, Supplement III, August 1995.

Hach, Water Analysis Handbook, 3rd Edition, 1997.

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition, 1986 including Update I, July 1992; Update IIA, August 1993; Update II; September 1994; Update IIB, January 1995; Update III, December 1996

Bureau of Laboratory Services, State of Arizona Department of Health Services Method 418.1AZ: TPH in Soil, September 1994.

Bureau of Laboratory Services, State of Arizona Department of Health Services Method 8015AZ.R1, September 1998. (Comment: C6-C10 GRO reported by this method is not to be used in compliance situations)

ASTM MethodD4982, Annual Book of ASTM Standards, Volumes 11.01 and 11.02, 1995

The Determination of Polychlorinated Biphenyls in Transformer Fluid and Waste Oils, EPA-600 4-81-045, September 1982.

TRANSWEST GEOCHEM

Date Printed 30-Nov-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0611382
Lab ID: 0611382-01
Project Name: Toole
Project Number:

Client Sample ID: Toole-EFF-112106
Collection Date: 11/21/2006 7:00:00 AM
Matrix: Air

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene	<0.50	0.50		mg/m³	1.0	8021B/8015B	11/20/06	11/21/06	MO	ML02061121
Benzene-ppmv	<0.16	0.16		ppmv	1.00	8021B/8015B	N/A	11/21/06	MO	ML02061121B
Toluene	<1.0	1.0		mg/m³	1.0	8021B/8015B	11/20/06	11/21/06	MO	ML02061121
Toluene-ppmv	<0.27	0.27		ppmv	1.00	8021B/8015B	N/A	11/21/06	MO	ML02061121B
Ethylbenzene	<1.0	1.0		mg/m³	1.0	8021B/8015B	11/20/06	11/21/06	MO	ML02061121
Ethylbenzene-ppmv	<0.23	0.23		ppmv	1.00	8021B/8015B	N/A	11/21/06	MO	ML02061121B
Xylenes, total	<1.5	1.5		mg/m³	1.0	8021B/8015B	11/20/06	11/21/06	MO	ML02061121
Xylenes, total-ppmv	<0.35	0.35		ppmv	1.00	8021B/8015B	N/A	11/21/06	MO	ML02061121B
TVFHC (C6-C10)	<100	100		mg/m³	1.0	8021B/8015B	11/20/06	11/21/06	MO	ML02061121
TVFHC (C6-C10)-ppmv	<24.00	24.00		ppmv	1.00	8021B/8015B	N/A	11/21/06	MO	ML02061121B
Bromofluorobenzene(Surrogate)	102	56-140		%REC	1.0	8021B/8015B	11/20/06	11/21/06	MO	ML02061121

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TRANSWEST GEOCHEM

Date Printed 30-Nov-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0611382
Lab ID: 0611382-02
Project Name: Toole
Project Number:

Client Sample ID: Toole-IN-112106
Collection Date: 11/21/2006 7:05:00 AM
Matrix: Air

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene	**4.8**	0.50		mg/m³	1.0	8021B/8015B	11/20/06	11/21/06	MO	ML02061121
Benzene-ppmv	**1.50**	0.16		ppmv	1.00	8021B/8015B	N/A	11/21/06	MO	ML02061121B
Toluene	**35**	2.0	D1	mg/m³	2.0	8021B/8015B	11/20/06	11/21/06	MO	ML02061121
Toluene-ppmv	**9.30**	0.54	D1	ppmv	2.00	8021B/8015B	N/A	11/21/06	MO	ML02061121B
Ethylbenzene	**9.7**	1.0		mg/m³	1.0	8021B/8015B	11/20/06	11/21/06	MO	ML02061121
Ethylbenzene-ppmv	**2.24**	0.23		ppmv	1.00	8021B/8015B	N/A	11/21/06	MO	ML02061121B
Xylenes, total	**63**	1.5		mg/m³	1.0	8021B/8015B	11/20/06	11/21/06	MO	ML02061121
Xylenes, total-ppmv	**14.57**	0.35		ppmv	1.00	8021B/8015B	N/A	11/21/06	MO	ML02061121B
TVFHC (C6-C10)	**1400**	200	D2	mg/m³	2.0	8021B/8015B	11/20/06	11/21/06	MO	ML02061121
TVFHC (C6-C10)-ppmv	**349.23**	48.00	D2	ppmv	2.00	8021B/8015B	N/A	11/21/06	MO	ML02061121B
Bromofluorobenzene(Surrogate)	95	56-140		%REC	1.0	8021B/8015B	11/20/06	11/21/06	MO	ML02061121

Confidential and Privileged

Date: 30-Nov-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0611382
Project: Toole

QC SUMMARY REPORT

Method Blank

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene-ppmv	<0.16	0.16		ppmv	1	8021B/8015B	N/A	11/21/06	MO	ML02061121B
Toluene-ppmv	<0.27	0.27		ppmv	1	8021B/8015B	N/A	11/21/06	MO	ML02061121B
Ethylbenzene-ppmv	<0.23	0.23		ppmv	1	8021B/8015B	N/A	11/21/06	MO	ML02061121B
Xylenes, total-ppmv	<0.35	0.35		ppmv	1	8021B/8015B	N/A	11/21/06	MO	ML02061121B
TVFHC (C6-C10)-ppmv	<24.00	24.00		ppmv	1	8021B/8015B	N/A	11/21/06	MO	ML02061121B
Benzene	<0.50	0.50		mg/m³	1	8021B/8015B	11/20/06	11/21/06	MO	ML02061121
Toluene	<1.0	1.0		mg/m³	1	8021B/8015B	11/20/06	11/21/06	MO	ML02061121
Ethylbenzene	<1.0	1.0		mg/m³	1	8021B/8015B	11/20/06	11/21/06	MO	ML02061121
Xylenes, total	<1.5	1.5		mg/m³	1	8021B/8015B	11/20/06	11/21/06	MO	ML02061121
TVFHC (C6-C10)	<100	100		mg/m³	1	8021B/8015B	11/20/06	11/21/06	MO	ML02061121
Bromofluorobenzene	99	56-140		%REC	1	8021B/8015B	11/20/06	11/21/06	MO	ML02061121

Date: 30-Nov-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0611382
Project: Toole

QC SUMMARY REPORT

Sample Duplicate

Analyte	Result	PQL	Units	RPD Ref Val	% RPD	RPD Limit	Test Code	Date Prepared	Date Analyzed	Analyst	Qual
Sample ID: **0611380-03AD**		Batch ID:	ML02061121								
Client ID:											
Benzene	61.68	25	mg/m³	66.73	8%	30	8021B/8015B	11/20/06	11/21/06	MO	
Toluene	756.9	50	mg/m³	746.3	1%	30	8021B/8015B	11/20/06	11/21/06	MO	
Ethylbenzene	87.10	50	mg/m³	83.89	4%	30	8021B/8015B	11/20/06	11/21/06	MO	
Xylenes, total	769.4	75	mg/m³	800.0	4%	30	8021B/8015B	11/20/06	11/21/06	MO	
TVFHC (C6-C10)	13870	5000	mg/m³	14440	4%	30	8021B/8015B	11/20/06	11/21/06	MO	

Date: 30-Nov-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0611382
Project: Toole

QC SUMMARY REPORT

Blank Spike

Analyte	Result	PQL	SPK value	SPK Ref Val	% Rec	Low Limit	High Limit	RPD Ref Val	% RPD	RPD Limit	Qual
Sample ID: **LCS 11/21**	Batch ID: ML02061121			Test Code: 8021B/8015B				Date Analyzed: 11/21/06 00:00			
				Units: mg/m³				Date Prepared: 11/20/06			
Benzene	5.000	0.50	5.000		100%	70	130				
Toluene	5.100	1.0	5.000		102%	70	130				
Ethylbenzene	5.400	1.0	5.000		108%	70	130				
Xylenes, total	16.102	1.5	15.00		107%	70	130				
TVFHC (C6-C10)	265.3	100	250.0		106%	56	135				
Bromofluorobenzene	10.00	0.50	10.00		100%	56	140				

GEOL EM

Sample Receipt Checklist

Client Name: City of Tucson - ES

Date and Time Received: 11/21/06 07:42

Work Order Number: 0611382

Received by: Keith Konola

Checklist completed by: Keith K. 11/21/06
Signature / Date

Logged In by: _____
Initials / Date

Matrix: Air

Carrier Name: Verdad

Reviewed by: _____
Initials / Date

			COMMENTS
Shipping container/cooler in good condition?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	N/A ☐
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	Temp: 23.4°C → Tedlar Bags
Water – VOA vials have zero headspace?	Yes ☐	No ☐	N/A ☑
Water – pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
Water – Sulfides present in Cyanide samples?	Yes ☐	No ☐	N/A ☑

Adjusted ? _____ Checked by: _____

Client contacted: _____ Date contacted: _____ Person contacted: _____

Contacted by: _____ Regarding: _____

Corrective Action: _____

Storage Location: MO

TRANSWEST GEOCHEM

Sample Receipt Checklist

Client Name: LOT - ES

Date and Time Received: 11.21.06 13.00

Work Order Number: 0611382

Checked by: [signature]

Checklist completed by: [signature] 11.21.06
Signature / Date

Logged In by: [signature] 11.21.06
Initials / Date

Matrix:

Carrier Name: Client TGI Express 77

Reviewed by: [signature] 11/22/06
Initials / Date

				COMMENTS
Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑	
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	Temp:_____	Sampled < 2hrs ☐
Water – VOA vials have zero headspace?	Yes ☐	No ☐	N/A ☑	
Water – pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	Checked by: [signature]
Water – Sulfides present in Cyanide samples?	Yes ☐	No☐	N/A ☑	
Samples considered Drinking Water for metal analysis?	Yes ☐	No☐	N/A ☑	

Client contacted: _____ Date contacted: _____ Person contacted: _____

Contacted by: _____ Regarding: _____

Corrective Action: _____

TRANSWEST GEOCHEM

3725 E. Atlanta Ave.
Phoenix, Arizona 85040
Phone: (602) 437-0330
Fax: (602) 437-0660

3860 S. Palo Verde Rd., Ste. 301
Tucson, Arizona 85714
Phone: (520) 573-1061
Fax: (520) 573-1063

Chain of Custody

TGI Work Order No: 0611382

Date 11/21/06 Page 1 of 1

Project Manager:	Molly Collins
Client Name:	COT-ES
Address:	
City, State, Zip:	
Phone:	791-5414 Fax:

Bill To:	COT-ES
Company:	
Address:	
City, State, Zip:	
Phone:	Fax:

P.O. No.:	
Project Name:	TOOLE
Project Number:	

SAMPLE RECEIPT

Temperature:	23.4°C	Ice:
Received Intact:	(Yes) No N/A	(Absent) / Present
Custody Seals:	Yes (No) N/A	Wet / Blue
Total No. of Containers:	2	(Sampled <2 hrs ago)

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Lab ID	No. of Containers	TPH, (8015AZR.1)	BTEX (8021B)	Volatile Organics GCMS (624/8260B)	SDWA Volatiles, (524.2)	Semi-Volatile Organics GCMS (625/8270)	Organochlorine Pesticides (608/8081)	PCB's, (8082)	PAH, EPA (8310)	8 RCRA Metals	Comments
Toole-EFF-112106	Air	11/21	0700	01	1	X	X								
Toole-IN-112106	Air	11/21	0705	02	1	X	X								

Relinquished by: (Signature)	(Print Name)	Received by: (Signature)	(Print Name)	Date / Time
1 [signature]	Geno Fonsweer	Keith Konola	Keith Konola	11/21/06 07:42
2 Keith Konola	Keith Konola		AZ Shuttle	11/21/06 10:00
3	AZ Shuttle	[signature]	Elizabeth Morris	11.01.06 13.00

White copy to TGI, Yellow copy for final report, Pink copy to sampler

Revised: 3/6/06

TRANSWEST GEOCHEM

November 14, 2005

RECEIVED

NOV 15 2005

ENVIRONMENTAL SERVICES
100 N. STONE AVE., 2ND FLOOR

Nancy Petersen
City of Tucson, Environmental Services
100 N. Stone, 2nd Floor, W. Side
Tucson, AZ 85701

RE: Toole

Work Order No.: 0511039

Dear Nancy,

Transwest Geochem, Inc. received 3 samples on 11/2/2005 10:04:00 AM for the analyses presented in the following report.

The Case Narrative of this report addresses any Quality Control and/or Quality Assurance issues associated with this Work Order.

If you have any questions regarding these test results, please feel free to call us at (602) 437-0330.

Sincerely,

Beth Proffitt
Project Manager

ADHS License No. AZM133/AZ0133

3725 E. Atlanta Ave. • Suite 2 • Phoenix, Arizona 85040 • (602) 437-0330 • 1-800-927-5183 • Fax (602) 437-0660
3860 S. Palo Verde Rd. • Suite 301 • Tucson, Arizona 85714 • (520) 573-1061 • Fax (520) 573-1063

TRANSWEST GEOCHEM

Client: City of Tucson, Environmental Services
Work Order: 0511039
Project Name: Toole
Project Number:

Date Printed: 14-Nov-05

Case Narrative

All method blanks, laboratory spikes, and sample duplicates met quality control objectives for the parameters associated with this Work Order except as detailed below or on the Data Qualifier page of this report. Data Qualifiers used in this report are in accordance with ADEQ Arizona Data Qualifiers, Revision 1.0 05/13/2002.

Data qualifiers ("flags") contained within this analytical report have been issued to explain a quality control deficiency, and do not affect the quality (validity) of the data unless noted otherwise in the case narrative.

The vapor analysis performed by Transwest Geochem, Inc. is a screening technique based on a modified EPA method. This data is not to be used in compliance situations.

3725 E. Atlanta Ave. • Suite 2 • Phoenix, Arizona 85040 • (602) 437-0330 • 1-800-927-5183 • Fax (602) 437-0660
3860 S. Palo Verde Rd. • Suite 301 • Tucson, Arizona 85714 • (520) 573-1061 • Fax (520) 573-1069

TRANSWEST GEOCHEM

Date Printed 11-Nov-05

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Project Name: Toole
Project Number:
Work Order: 0511039
Date Received: 02-Nov-05

Case Narrative
Data Qualifiers

One or more of the following data qualifiers may be associated with your analytical and/or quality control data.

D1 Sample required dilution due to matrix.
D2 Sample required dilution due to high concentration of target analyte.

TRANSWEST GEOCHEM

Date Printed 11-Nov-05

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Project Name: Toole
Project Number:
Work Order: 0511039
Date Received: 02-Nov-05

Work Order Sample Summary

Client Sample ID	Lab Sample ID	Test Code	Collection Date
Toole-Inf	0511039-01A	8021B/8015B	11/2/2005 8:15:00 AM
Toole-PD	0511039-02A	8021B/8015B	11/2/2005 8:10:00 AM
Toole-Eff	0511039-03A	8021B/8015B	11/2/2005 8:00:00 AM

TRANSWEST GEOCHEM

Date Printed 11-Nov-05

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Project Name: Toole
Project Number:
Work Order: 0511039
Date Received: 02-Nov-05

Definitions

Analytical Spike (AS)	The AS is a known amount of a target analyte added to a sample after it has been distilled, digested, or extracted and is ready for analysis. The AS is generally performed if the MS has failed. It is used to indicate interference that arises from sample distillation, digestion, or extraction as opposed to interference that is innate to the matrix.
Continuing Curve Verification (CCV)	The CCV is also referred to as a curve check. This is a standard analyzed at specified intervals during an analysis. The CCV verifies the stability and accuracy of the calibration curve. There are specific CCV recovery acceptance criteria for each method.
Dilution Factor (DF)	The DF is an indication of how much a sample had to be diluted in order to quantitate it on a standard curve. The DF is indicated in the reported sample result. The sample PQL increases as the dilution increases.
Internal Standard (IS)	The IS is a compound that is similar to the organic compound of interest in terms of chemical composition but is unique in that it is rare in the environment. The same concentration of IS is added to every sample for some organic methods.
Laboratory Control Sample (LCS)	The LCS is also referred to as a blank spike. The LCS is an addition of a known amount of a target analyte (from the same source as calibration standards or spikes) to an aliquot of deionized water or other appropriate clean matrix. The LCS is processed through the entire method procedure in the same manner as samples.
Matrix Spike (MS)	The MS is a known amount of a target analyte added to a sample. The MS is processed through the entire method procedure in the same manner as samples.
Method Blank (MB)	The MB is an aliquot of deionized water or other appropriate clean matrix that is thought to be free of the analyte in question. The MB is processed through the entire extraction or analysis procedure and is used to indicate contamination in the lab.
Method Detection Limit (MDL)	The MDL is the lowest level of detection of which a method is capable.
Practical Quantitation Limit (PQL)	The PQL is the lowest value at which Transwest Geochem can detect an analyte in matrix with a high degree of confidence. The PQL will increase as the DF increases. The PQL is greater than or equal to the MDL.
Relative Percent Difference (RPD)	The RPD is a measure of precision (the ability to obtain the same result on re-analysis of the same sample). It is calculated using the result of a sample, MS, LCS, or LCSV and its associated duplicate result.
Secondary Source QC Sample (LCSV)	The LCSV is also referred to as a second source laboratory control sample. It is the same type of standard as a calibration or spiking standard but is obtained from a different source. The LCSV is an indication of the primary standard quality, method performance, and instrument performance.
Surrogate	A surrogate compound is similar to the organic compound of interest in terms of chemical composition but is unique in that it is rare in the environment. When surrogates are used, they are added to every sample, blank and standard. Surrogate recovery is used as an indication of extraction and/or analytical success.
Trip Blank (TB)	The TB is a portion of deionized water preserved in the same manner as the samples. The TB travels from the lab, to the field, and then back to the lab with the samples from the field. The TB serves as an indication of contamination introduced during sample transportation.

TRANSWEST GEOCHEM

Date Printed 11-Nov-05

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Project Name: Toole
Project Number:
Work Order: 0511039
Date Received: 02-Nov-05

References

Transwest Geochem, Inc. uses the methods outlined in the following references:

Code of Federal Regulations, 40CFR, Part 136, Appendix A, 1998.

Standard Methods for the Examination of Water and Wastewater, 19th Edition, 1995.

Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Revised March 1983.

Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, Revised August 1993.

Methods for the Determination of Metals in Environmental Samples, Supplement 1: EPA/600/R-94/111, Revised May 1994.

Methods for the Determination of Organic Compounds in Drinking Water, EPA/600/4-88/039, Revised July, 1991; EPA-600/4-90/020, Supplement I, July 1990; EPA-600/R-92/129; Supplement II, August 1992; EPA-600/R-95/131, Supplement III, August 1995.

Hach, Water Analysis Handbook, 3rd Edition, 1997.

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition, 1986 including Update I, July 1992; Update IIA, August 1993; Update II; September 1994; Update IIB, January 1995; Update III, December 1996

Bureau of Laboratory Services, State of Arizona Department of Health Services Method 418.1AZ: TPH in Soil, September 1994.

Bureau of Laboratory Services, State of Arizona Department of Health Services Method 8015AZ.R1, September 1998. (Comment: C6-C10 GRO reported by this method is not to be used in compliance situations)

ASTM MethodD4982, Annual Book of ASTM Standards, Volumes 11.01 and 11.02, 1995

The Determination of Polychlorinated Biphenyls in Transformer Fluid and Waste Oils, EPA-600 4-81-045, September 1982.

TRANSWEST GEOCHEM

Date Printed 11-Nov-05

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0511039
Lab ID: 0511039-01
Project Name: Toole
Project Number:

Client Sample ID: Toole-Inf
Collection Date: 11/2/2005 8:15:00 AM
Matrix: Air

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene	**34**	2.5	D1	mg/m³	5.0	8021B/8015B	N/A	11/3/05	MO	ML2051103
Benzene-ppmv	**10.66**	0.80	D1	ppmv	5.00	8021B/8015B	N/A	11/3/05	MO	ML2051103B
Toluene	**180**	10	D2	mg/m³	10	8021B/8015B	N/A	11/3/05	MO	ML2051103
Toluene-ppmv	**48.42**	2.70	D2	ppmv	10.00	8021B/8015B	N/A	11/3/05	MO	ML2051103B
Ethylbenzene	**59**	5.0	D2	mg/m³	5.0	8021B/8015B	N/A	11/3/05	MO	ML2051103
Ethylbenzene-ppmv	**13.52**	1.15	D1	ppmv	5.00	8021B/8015B	N/A	11/3/05	MO	ML2051103B
Xylenes, total	**280**	7.5	D2	mg/m³	5.0	8021B/8015B	N/A	11/3/05	MO	ML2051103
Xylenes, total-ppmv	**64.07**	1.75	D2	ppmv	5.00	8021B/8015B	N/A	11/3/05	MO	ML2051103B
TVFHC (C6-C10)	**6400**	1000	D2	mg/m³	10	8021B/8015B	N/A	11/3/05	MO	ML2051103
TVFHC (C6-C10)-ppmv	**1554.3**	240.00	D2	ppmv	10.00	8021B/8015B	N/A	11/3/05	MO	ML2051103B
Bromofluorobenzene(Surrogate)	95	61-135		%REC	5.0	8021B/8015B	N/A	11/3/05	MO	ML2051103

TRANSWEST GEOCHEM

Date Printed 11-Nov-05

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0511039
Lab ID: 0511039-02
Project Name: Toole
Project Number:

Client Sample ID: Toole-PD
Collection Date: 11/2/2005 8:10:00 AM
Matrix: Air

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene	**23**	2.5	D1	mg/m³	5.0	8021B/8015B	N/A	11/3/05	MO	ML2051103
Benzene-ppmv	**7.35**	0.80	D1	ppmv	5.00	8021B/8015B	N/A	11/3/05	MO	ML2051103B
Toluene	**110**	5.0	D2	mg/m³	5.0	8021B/8015B	N/A	11/3/05	MO	ML2051103
Toluene-ppmv	**28.97**	1.35	D2	ppmv	5.00	8021B/8015B	N/A	11/3/05	MO	ML2051103B
Ethylbenzene	**40**	5.0	D1	mg/m³	5.0	8021B/8015B	N/A	11/3/05	MO	ML2051103
Ethylbenzene-ppmv	**9.27**	1.15	D1	ppmv	5.00	8021B/8015B	N/A	11/3/05	MO	ML2051103B
Xylenes, total	**190**	7.5	D2	mg/m³	5.0	8021B/8015B	N/A	11/3/05	MO	ML2051103
Xylenes, total-ppmv	**44.29**	1.75	D2	ppmv	5.00	8021B/8015B	N/A	11/3/05	MO	ML2051103B
TVFHC (C6-C10)	**3900**	500	D2	mg/m³	5.0	8021B/8015B	N/A	11/3/05	MO	ML2051103
TVFHC (C6-C10)-ppmv	**945.19**	120.00	D2	ppmv	5.00	8021B/8015B	N/A	11/3/05	MO	ML2051103B
Bromofluorobenzene(Surrogate)	91	61-135		%REC	5.0	8021B/8015B	N/A	11/3/05	MO	ML2051103

TRANSWEST GEOCHEM

Date Printed 11-Nov-05

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0511039
Lab ID: 0511039-03
Project Name: Toole
Project Number:

Client Sample ID: Toole-Eff
Collection Date: 11/2/2005 8:00:00 AM
Matrix: Air

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene	<0.50	0.50		mg/m³	1.0	8021B/8015B	N/A	11/3/05	MO	ML2051103
Benzene-ppmv	<0.16	0.16		ppmv	1.00	8021B/8015B	N/A	11/3/05	MO	ML2051103B
Toluene	<1.0	1.0		mg/m³	1.0	8021B/8015B	N/A	11/3/05	MO	ML2051103
Toluene-ppmv	<0.27	0.27		ppmv	1.00	8021B/8015B	N/A	11/3/05	MO	ML2051103B
Ethylbenzene	<1.0	1.0		mg/m³	1.0	8021B/8015B	N/A	11/3/05	MO	ML2051103
Ethylbenzene-ppmv	<0.23	0.23		ppmv	1.00	8021B/8015B	N/A	11/3/05	MO	ML2051103B
Xylenes, total	<1.5	1.5		mg/m³	1.0	8021B/8015B	N/A	11/3/05	MO	ML2051103
Xylenes, total-ppmv	<0.35	0.35		ppmv	1.00	8021B/8015B	N/A	11/3/05	MO	ML2051103B
TVFHC (C6-C10)	<100	100		mg/m³	1.0	8021B/8015B	N/A	11/3/05	MO	ML2051103
TVFHC (C6-C10)-ppmv	<24.00	24.00		ppmv	1.00	8021B/8015B	N/A	11/3/05	MO	ML2051103B
Bromofluorobenzene(Surrogate)	93	61-135		%REC	1.0	8021B/8015B	N/A	11/3/05	MO	ML2051103

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TRANSWEST GEOCHEM

Date: 11-Nov-05

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0511039
Project: Toole

QC SUMMARY REPORT

Method Blank

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene-ppmv	<0.16	0.16		ppmv	1	8021B/8015B	N/A	11/3/05	MO	ML2051103B
Toluene-ppmv	<0.27	0.27		ppmv	1	8021B/8015B	N/A	11/3/05	MO	ML2051103B
Ethylbenzene-ppmv	<0.23	0.23		ppmv	1	8021B/8015B	N/A	11/3/05	MO	ML2051103B
Xylenes, total-ppmv	<0.35	0.35		ppmv	1	8021B/8015B	N/A	11/3/05	MO	ML2051103B
TVFHC (C6-C10)-ppmv	<24.00	24.00		ppmv	1	8021B/8015B	N/A	11/3/05	MO	ML2051103B
Benzene	<0.50	0.50		mg/m³	1	8021B/8015B	N/A	11/3/05	MO	ML2051103
Toluene	<1.0	1.0		mg/m³	1	8021B/8015B	N/A	11/3/05	MO	ML2051103
Ethylbenzene	<1.0	1.0		mg/m³	1	8021B/8015B	N/A	11/3/05	MO	ML2051103
Xylenes, total	<1.5	1.5		mg/m³	1	8021B/8015B	N/A	11/3/05	MO	ML2051103
TVFHC (C6-C10)	<100	100		mg/m³	1	8021B/8015B	N/A	11/3/05	MO	ML2051103
Bromofluorobenzene	92	61-135		%REC	1	8021B/8015B	N/A	11/3/05	MO	ML2051103
Methyl tert-butyl ether-ppmv	<0.42	0.42		ppmv	1	8021B/8015B	N/A	11/4/05	MO	ML2051103B
Benzene-ppmv	<0.16	0.16		ppmv	1	8021B/8015B	N/A	11/4/05	MO	ML2051103B
Toluene-ppmv	<0.27	0.27		ppmv	1	8021B/8015B	N/A	11/4/05	MO	ML2051103B
Ethylbenzene-ppmv	<0.23	0.23		ppmv	1	8021B/8015B	N/A	11/4/05	MO	ML2051103B
Xylenes, total-ppmv	<0.35	0.35		ppmv	1	8021B/8015B	N/A	11/4/05	MO	ML2051103B
TVFHC (C6-C10)-ppmv	<24.00	24.00		ppmv	1	8021B/8015B	N/A	11/4/05	MO	ML2051103B
Methyl tert-butyl ether	<1.5	1.5		mg/m³	1	8021B/8015B	N/A	11/4/05	MO	ML2051103
Benzene	<0.50	0.50		mg/m³	1	8021B/8015B	N/A	11/4/05	MO	ML2051103
Toluene	<1.0	1.0		mg/m³	1	8021B/8015B	N/A	11/4/05	MO	ML2051103
Ethylbenzene	<1.0	1.0		mg/m³	1	8021B/8015B	N/A	11/4/05	MO	ML2051103
Xylenes, total	<1.5	1.5		mg/m³	1	8021B/8015B	N/A	11/4/05	MO	ML2051103
TVFHC (C6-C10)	<100	100		mg/m³	1	8021B/8015B	N/A	11/4/05	MO	ML2051103
Bromofluorobenzene	94	61-135		%REC	1	8021B/8015B	N/A	11/4/05	MO	ML2051103

TRANSWEST GEOCHEM

Date: 11-Nov-05

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0511039
Project: Toole

QC SUMMARY REPORT

Sample Duplicate

Analyte	Result	PQL	Units	RPD Ref Val	% RPD	RPD Limit	Test Code	Date Prepared	Date Analyzed	Analyst	Qual
Sample ID: **0511039-02AD**		Batch ID: ML2051103									
Client ID: **Toole-PD**											
Benzene	20.73	2.5	mg/m³	23.44	12%	30	8021B/8015B	N/A	11/3/05	MO	
Toluene	103.2	5.0	mg/m³	109.0	5%	30	8021B/8015B	N/A	11/3/05	MO	
Ethylbenzene	37.18	5.0	mg/m³	40.19	8%	30	8021B/8015B	N/A	11/3/05	MO	
Xylenes, total	181.01	7.5	mg/m³	192.0	6%	30	8021B/8015B	N/A	11/3/05	MO	
TVFHC (C6-C10)	3791	500	mg/m³	3866	2%	30	8021B/8015B	N/A	11/3/05	MO	
Sample ID: **0511096-02AD**		Batch ID: ML2051103									
Client ID:											
Methyl tert-butyl ether	<15	15	mg/m³	<15	0%	30	8021B/8015B	N/A	11/4/05	MO	
Benzene	29.40	5.0	mg/m³	25.13	16%	30	8021B/8015B	N/A	11/4/05	MO	
Toluene	885.6	50	mg/m³	962.6	8%	30	8021B/8015B	N/A	11/4/05	MO	
Ethylbenzene	160.7	10	mg/m³	157.8	2%	30	8021B/8015B	N/A	11/4/05	MO	
Xylenes, total	723.4	15	mg/m³	678.5	6%	30	8021B/8015B	N/A	11/4/05	MO	
TVFHC (C6-C10)	9566	1000	mg/m³	9225	4%	30	8021B/8015B	N/A	11/4/05	MO	

TRANSWEST GEOCHEM

Date: 11-Nov-05

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0511039
Project: Toole

QC SUMMARY REPORT

Blank Spike

Analyte	Result	PQL	SPK value	SPK Ref Val	% Rec	Low Limit	High Limit	RPD Ref Val	% RPD	RPD Limit	Qual
Sample ID: **LCS 11/3/05**	Batch ID: ML2051103			Test Code: 8021B/8015B				Date Analyzed: 11/03/05 00:00			
				Units mg/m³				Date Prepared: N/A			
Benzene	5.100	0.50	5.000		102%	70	130				
Toluene	5.200	1.0	5.000		104%	70	130				
Ethylbenzene	4.700	1.0	5.000		94%	70	130				
Xylenes, total	14.669	1.5	15.00		98%	70	130				
TVFHC (C6-C10)	251.8	100	250.0		101%	70	130				
Bromofluorobenzene	9.100	0.50	10.00		91%	61	135				
Sample ID: **LCS 11/4/05**	Batch ID: ML2051103			Test Code: 8021B/8015B				Date Analyzed: 11/04/05 00:00			
				Units mg/m³				Date Prepared: N/A			
Methyl tert-butyl ether	4.600	1.5	5.000		92%	70	130				
Benzene	4.900	0.50	5.000		98%	70	130				
Toluene	5.100	1.0	5.000		102%	70	130				
Ethylbenzene	4.700	1.0	5.000		94%	70	130				
Xylenes, total	14.259	1.5	15.00		95%	70	130				
TVFHC (C6-C10)	246.1	100	250.0		98%	70	130				
Bromofluorobenzene	9.200	0.50	10.00		92%	61	135				

TRANSWEST GEOCHEM

Sample Receipt Checklist

Client Name: City of Tucson-E.S.

Date and Time Received: 11/2/05 10:04

Work Order Number: 0511039

Received by: Keith Karola

Checklist completed by: Keith K. 11/2/05
Signature / Date

Logged In by: _____
Initials / Date

Matrix: Air

Carrier Name: Verdad

Reviewed by: _____
Initials / Date

				COMMENTS
Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑	
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐	N/A ☐	
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	Temp: 23.2°C → Tedlar Bags.	
Water – VOA vials have zero headspace?	Yes ☐	No ☐	N/A ☑	
Water – pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	
Water – Sulfides present in Cyanide samples?	Yes ☐	No ☐	N/A ☑	

Adjusted ? _____ Checked by: _____

Client contacted: _____ Date contacted: _____ Person contacted: _____

Contacted by: _____ Regarding: _____

Corrective Action: _____

TRANSWEST GEOCHEM
3725 East Atlanta Avenue, Suite 2
Phoenix, Arizona 85040
Phone: (602) 437-0330
Fax: (602) 437-0660

Chain of Custody

TGI Work Order No: 0511039

Date 11/2/05 Page 1 of 1

Project Manager:	Molly Collins		
Client Name:	COT - ENV SERVICES		
Address:			
City, State ZIP:			
Phone:	791-5414	Fax:	-5417

Bill to:	COT - ENV SVCS		
Company:			
Address:			
City, State ZIP:			
Phone:		Fax:	

P.O. No.:	
Project Name:	TOOLE
Project Number:	

SAMPLE RECEIPT

Temperature: 23.2°C	Ambient / Cold	Ice:
Received Intact:	Y	Absent / Present
Custody Seals:	N	Wet / Blue
Total No. of Containers:	3	

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Lab ID	No. of Containers	TPH, (418.1 /418.1AZ)	TPH, 8015AZR.1	BTEX (8021B)	Volatile Organics GCMS (624/8260AZ)	SDWA Volatiles, (524.2)	Semi-Volatile Organics GCMS (625/8270)	Organochlorine Pesticides (608/8081)	PCB's, (8082)	PAH, EPA 8310	8 RCRA Metals	13 Priority Pollutant Metals	Comments
Toole - INF	AIR	11/2	0815	01	1	X	X	X									
Toole - PD	"	11/2	0810	02	1	X	X	X									8015 AZ +
Toole - EFF	"	11/2	0800	03	1	X	X	X									8021B Only

Relinquished by: (Signature)	(Print Name)	Date/Time	Received by: (Signature)	(Print Name)	Date/Time
1 [signature]	Geno Forshee	11/2/05 1002	Keith Konola	Keith Konola	11/2/05 10:04
2 Keith Konola	Keith Konola	11/2/05 15:00		Express It	11/2/05 15:00
3	Express It	11/3/05 9:10	[signature]	[signature]	11/3/05 9:10

White copy to TGI, Yellow copy for final report, Pink copy to sampler

Revised: 6/29/00

TRANSWEST GEOCHEM

November 10, 2005

Nancy Petersen
City of Tucson, Environmental Services
100 N. Stone, 2nd Floor, W. Side
Tucson, AZ 85701

RECEIVED
NOV 14 2005
ENVIRONMENTAL SERVICES
100 N. STONE AVE., 2ND FLOOR

RE: Toole Ave.

Work Order No.: 0510315

Dear Nancy,

Transwest Geochem, Inc. received 3 samples on 10/20/2005 10:05:00 AM for the analyses presented in the following report.

The Case Narrative of this report addresses any Quality Control and/or Quality Assurance issues associated with this Work Order.

If you have any questions regarding these test results, please feel free to call us at (602) 437-0330.

Sincerely,

Beth Proffitt
Project Manager

ADHS License No. AZM133/AZ0133

3725 E. Atlanta Ave. • Suite 2 • Phoenix, Arizona 85040 • (602) 437-0330 • 1-800-927-5183 • Fax (602) 437-0660
3860 S. Palo Verde Rd. • Suite 301 • Tucson, Arizona 85714 • (520) 573-1061 • Fax (520) 573-1063

TRANSWEST GEOCHEM

Client: City of Tucson, Environmental Services
Work Order: 0510315
Project Name: Toole Ave.
Project Number:

Date Printed: 10-Nov-05

Case Narrative

All method blanks, laboratory spikes, and sample duplicates met quality control objectives for the parameters associated with this Work Order except as detailed below or on the Data Qualifier page of this report. Data Qualifiers used in this report are in accordance with ADEQ Arizona Data Qualifiers, Revision 1.0 05/13/2002.

Data qualifiers ("flags") contained within this analytical report have been issued to explain a quality control deficiency, and do not affect the quality (validity) of the data unless noted otherwise in the case narrative.

The vapor analysis performed by Transwest Geochem, Inc. is a screening technique based on a modified EPA method. This data is not to be used in compliance situations.

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3860 S. Palo Verde Rd. • Suite 301 • Tucson, Arizona 85714 • (520) 573-1964 • Fax

Date Printed 26-Oct-05

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Project Name: Toole Ave.
Project Number:
Work Order: 0510315
Date Received: 20-Oct-05

Case Narrative
Data Qualifiers

One or more of the following data qualifiers may be associated with your analytical and/or quality control data.

D1	Sample required dilution due to matrix.
D2	Sample required dilution due to high concentration of target analyte.

TRANSWEST GEOCHEM

Date Printed 26-Oct-05
License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Project Name: Toole Ave.
Project Number:
Work Order: 0510315
Date Received: 20-Oct-05

Work Order Sample Summary

Client Sample ID	Lab Sample ID	Test Code	Collection Date
Toole-Eff	0510315-01A	8021B/8015B	10/20/2005 8:15:00 AM
Toole-AD	0510315-02A	8021B/8015B	10/20/2005 8:20:00 AM
Toole-IN	0510315-03A	8021B/8015B	10/20/2005 8:25:00 AM

Date Printed 26-Oct-05

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services

Project Name: Toole Ave.

Project Number:

Work Order: 0510315

Date Received: 20-Oct-05

Definitions

Analytical Spike (AS)	The AS is a known amount of a target analyte added to a sample after it has been distilled, digested, or extracted and is ready for analysis. The AS is generally performed if the MS has failed. It is used to indicate interference that arises from sample distillation, digestion, or extraction as opposed to interference that is innate to the matrix.
Continuing Curve Verification (CCV)	The CCV is also referred to as a curve check. This is a standard analyzed at specified intervals during an analysis. The CCV verifies the stability and accuracy of the calibration curve. There are specific CCV recovery acceptance criteria for each method.
Dilution Factor (DF)	The DF is an indication of how much a sample had to be diluted in order to quantitate it on a standard curve. The DF is indicated in the reported sample result. The sample PQL increases as the dilution increases.
Internal Standard (IS)	The IS is a compound that is similar to the organic compound of interest in terms of chemical composition but is unique in that it is rare in the environment. The same concentration of IS is added to every sample for some organic methods.
Laboratory Control Sample (LCS)	The LCS is also referred to as a blank spike. The LCS is an addition of a known amount of a target analyte (from the same source as calibration standards or spikes) to an aliquot of deionized water or other appropriate clean matrix. The LCS is processed through the entire method procedure in the same manner as samples.
Matrix Spike (MS)	The MS is a known amount of a target analyte added to a sample. The MS is processed through the entire method procedure in the same manner as samples.
Method Blank (MB)	The MB is an aliquot of deionized water or other appropriate clean matrix that is thought to be free of the analyte in question. The MB is processed through the entire extraction or analysis procedure and is used to indicate contamination in the lab.
Method Detection Limit (MDL)	The MDL is the lowest level of detection of which a method is capable.
Practical Quantitation Limit (PQL)	The PQL is the lowest value at which Transwest Geochem can detect an analyte in matrix with a high degree of confidence. The PQL will increase as the DF increases. The PQL is greater than or equal to the MDL.
Relative Percent Difference (RPD)	The RPD is a measure of precision (the ability to obtain the same result on re-analysis of the same sample). It is calculated using the result of a sample, MS, LCS, or LCSV and its associated duplicate result.
Secondary Source QC Sample (LCSV)	The LCSV is also referred to as a second source laboratory control sample. It is the same type of standard as a calibration or spiking standard but is obtained from a different source. The LCSV is an indication of the primary standard quality, method performance, and instrument performance.
Surrogate	A surrogate compound is similar to the organic compound of interest in terms of chemical composition but is unique in that it is rare in the environment. When surrogates are used, they are added to every sample, blank and standard. Surrogate recovery is used as an indication of extraction and/or analytical success.
Trip Blank (TB)	The TB is a portion of deionized water preserved in the same manner as the samples. The TB travels from the lab, to the field, and then back to the lab with the samples from the field. The TB serves as an indication of contamination introduced during sample transportation.

CLIENT: City of Tucson, Environmental Services
Project Name: Toole Ave.
Project Number:
Work Order: 0510315
Date Received: 20-Oct-05

References

Transwest Geochem, Inc. uses the methods outlined in the following references:

Code of Federal Regulations, 40CFR, Part 136, Appendix A, 1998.

Standard Methods for the Examination of Water and Wastewater, 19th Edition, 1995.

Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Revised March 1983.

Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, Revised August 1993.

Methods for the Determination of Metals in Environmental Samples, Supplement 1: EPA/600/R-94/111, Revised May 1994.

Methods for the Determination of Organic Compounds in Drinking Water, EPA/600/4-88/039, Revised July, 1991; EPA-600/4-90/020, Supplement I, July 1990; EPA-600/R-92/129; Supplement II, August 1992; EPA-600/R-95/131, Supplement III, August 1995.

Hach, Water Analysis Handbook, 3rd Edition, 1997.

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition, 1986 including Update I, July 1992; Update IIA, August 1993; Update II; September 1994; Update IIB, January 1995; Update III, December 1996

Bureau of Laboratory Services, State of Arizona Department of Health Services Method 418.1AZ: TPH in Soil, September 1994.

Bureau of Laboratory Services, State of Arizona Department of Health Services Method 8015AZ.R1, September 1998. (Comment: C6-C10 GRO reported by this method is not to be used in compliance situations)

ASTM MethodD4982, Annual Book of ASTM Standards, Volumes 11.01 and 11.02, 1995

The Determination of Polychlorinated Biphenyls in Transformer Fluid and Waste Oils, EPA-600 4-81-045, September 1982.

TRANSWEST GEOCHEM

Date Printed 26-Oct-05

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0510315
Lab ID: 0510315-01
Project Name: Toole Ave.
Project Number:

Client Sample ID: Toole-Eff
Collection Date: 10/20/2005 8:15:00 AM
Matrix: Soil Vapor

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene	<0.50	0.50		mg/m³	1.0	8021B/8015B	N/A	10/21/05	MO	ML2051021
Benzene-ppmv	<0.16	0.16		ppmv	1.00	8021B/8015B	N/A	10/21/05	MO	ML2051021B
Toluene	<1.0	1.0		mg/m³	1.0	8021B/8015B	N/A	10/21/05	MO	ML2051021
Toluene-ppmv	<0.27	0.27		ppmv	1.00	8021B/8015B	N/A	10/21/05	MO	ML2051021B
Ethylbenzene	<1.0	1.0		mg/m³	1.0	8021B/8015B	N/A	10/21/05	MO	ML2051021
Ethylbenzene-ppmv	<0.23	0.23		ppmv	1.00	8021B/8015B	N/A	10/21/05	MO	ML2051021B
Xylenes, total	<1.5	1.5		mg/m³	1.0	8021B/8015B	N/A	10/21/05	MO	ML2051021
Xylenes, total-ppmv	<0.35	0.35		ppmv	1.00	8021B/8015B	N/A	10/21/05	MO	ML2051021B
TVFHC (C6-C10)	<100	100		mg/m³	1.0	8021B/8015B	N/A	10/21/05	MO	ML2051021
TVFHC (C6-C10)-ppmv	<24.00	24.00		ppmv	1.00	8021B/8015B	N/A	10/21/05	MO	ML2051021B
Bromofluorobenzene(Surrogate)	88	61-135		%REC	1.0	8021B/8015B	N/A	10/21/05	MO	ML2051021

TRANSWEST GEOCHEM

Date Printed 26-Oct-05

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0510315
Lab ID: 0510315-02
Project Name: Toole Ave.
Project Number:

Client Sample ID: Toole-AD
Collection Date: 10/20/2005 8:20:00 AM
Matrix: Soil Vapor

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene	**39**	5.0	D1	mg/m³	10	8021B/8015B	N/A	10/21/05	MO	ML2051021
Benzene-ppmv	**12.31**	1.60	D1	ppmv	10.00	8021B/8015B	N/A	10/21/05	MO	ML2051021B
Toluene	**140**	10	D2	mg/m³	10	8021B/8015B	N/A	10/21/05	MO	ML2051021
Toluene-ppmv	**37.36**	2.70	D2	ppmv	10.00	8021B/8015B	N/A	10/21/05	MO	ML2051021B
Ethylbenzene	**53**	10	D2	mg/m³	10	8021B/8015B	N/A	10/21/05	MO	ML2051021
Ethylbenzene-ppmv	**12.27**	2.30	D1	ppmv	10.00	8021B/8015B	N/A	10/21/05	MO	ML2051021B
Xylenes, total	**250**	15	D2	mg/m³	10	8021B/8015B	N/A	10/21/05	MO	ML2051021
Xylenes, total-ppmv	**57.54**	3.50	D2	ppmv	10.00	8021B/8015B	N/A	10/21/05	MO	ML2051021B
TVFHC (C6-C10)	**4700**	1000	D2	mg/m³	10	8021B/8015B	N/A	10/21/05	MO	ML2051021
TVFHC (C6-C10)-ppmv	**1148.9**	240.00	D2	ppmv	10.00	8021B/8015B	N/A	10/21/05	MO	ML2051021B
Bromofluorobenzene(Surrogate)	87	61-135		%REC	10	8021B/8015B	N/A	10/21/05	MO	ML2051021

TRANSWEST GEOCHEM

Date Printed 26-Oct-05

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0510315
Lab ID: 0510315-03
Project Name: Toole Ave.
Project Number:

Client Sample ID: Toole-IN
Collection Date: 10/20/2005 8:25:00 AM
Matrix: Soil Vapor

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene	**55**	5.0	D2	mg/m³	10	8021B/8015B	N/A	10/21/05	MO	ML2051021
Benzene-ppmv	**17.17**	1.60	D1	ppmv	10.00	8021B/8015B	N/A	10/21/05	MO	ML2051021B
Toluene	**200**	10	D2	mg/m³	10	8021B/8015B	N/A	10/21/05	MO	ML2051021
Toluene-ppmv	**53.17**	2.70	D2	ppmv	10.00	8021B/8015B	N/A	10/21/05	MO	ML2051021B
Ethylbenzene	**73**	10	D2	mg/m³	10	8021B/8015B	N/A	10/21/05	MO	ML2051021
Ethylbenzene-ppmv	**16.83**	2.30	D2	ppmv	10.00	8021B/8015B	N/A	10/21/05	MO	ML2051021B
Xylenes, total	**330**	15	D2	mg/m³	10	8021B/8015B	N/A	10/21/05	MO	ML2051021
Xylenes, total-ppmv	**76.55**	3.50	D2	ppmv	10.00	8021B/8015B	N/A	10/21/05	MO	ML2051021B
TVFHC (C6-C10)	**6900**	1000	D2	mg/m³	10	8021B/8015B	N/A	10/21/05	MO	ML2051021
TVFHC (C6-C10)-ppmv	**1696.2**	240.00	D2	ppmv	10.00	8021B/8015B	N/A	10/21/05	MO	ML2051021B
Bromofluorobenzene(Surrogate)	88	61-135		%REC	10	8021B/8015B	N/A	10/21/05	MO	ML2051021

TRANSWEST GEOCHEM

Date: 26-Oct-05

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0510315
Project: Toole Ave.

QC SUMMARY REPORT

Method Blank

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene-ppmv	<0.16	0.16		ppmv	1	8021B/8015B	N/A	10/21/05	MO	ML2051021B
Toluene-ppmv	<0.27	0.27		ppmv	1	8021B/8015B	N/A	10/21/05	MO	ML2051021B
Ethylbenzene-ppmv	<0.23	0.23		ppmv	1	8021B/8015B	N/A	10/21/05	MO	ML2051021B
Xylenes, total-ppmv	<0.35	0.35		ppmv	1	8021B/8015B	N/A	10/21/05	MO	ML2051021B
TVFHC (C6-C10)-ppmv	<24.00	24.00		ppmv	1	8021B/8015B	N/A	10/21/05	MO	ML2051021B
Benzene	<0.50	0.50		mg/m³	1	8021B/8015B	N/A	10/21/05	MO	ML2051021
Toluene	<1.0	1.0		mg/m³	1	8021B/8015B	N/A	10/21/05	MO	ML2051021
Tetrachloroethene	<1.0	1.0		mg/m³	1	8021B/8015B	N/A	10/21/05	MO	ML2051021
Xylenes, total	<1.5	1.5		mg/m³	1	8021B/8015B	N/A	10/21/05	MO	ML2051021
TVFHC (C6-C10)	<100	100		mg/m³	1	8021B/8015B	N/A	10/21/05	MO	ML2051021
Bromofluorobenzene	87	61-135		%REC	1	8021B/8015B	N/A	10/21/05	MO	ML2051021

TRANSWEST GEOCHEM

Date: 26-Oct-05

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0510315
Project: Toole Ave.

QC SUMMARY REPORT

Sample Duplicate

Analyte	Result	PQL	Units	RPD Ref Val	% RPD	RPD Limit	Test Code	Date Prepared	Date Analyzed	Analyst	Qual
Sample ID: **0510315-02AD**		Batch ID: ML2051021									
Client ID: **Toole-AD**											
Benzene	37.68	5.0	mg/m³	39.26	4%	30	8021B/8015B	N/A	10/21/05	MO	
Toluene	135.9	10	mg/m³	140.6	3%	30	8021B/8015B	N/A	10/21/05	MO	
Ethylbenzene	50.24	10	mg/m³	53.20	6%	30	8021B/8015B	N/A	10/21/05	MO	
Xylenes, total	241.26	15	mg/m³	249.5	3%	30	8021B/8015B	N/A	10/21/05	MO	
TVFHC (C6-C10)	4601	1000	mg/m³	4699	2%	30	8021B/8015B	N/A	10/21/05	MO	

TRANSWEST GEOCHEM

Date: 26-Oct-05

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services

Work Order: 0510315

Project: Toole Ave.

QC SUMMARY REPORT

Blank Spike

Analyte	Result	PQL	SPK value	SPK Ref Val	% Rec	Low Limit	High Limit	RPD Ref Val	% RPD	RPD Limit	Qual
Sample ID: **LCS 10/21/05**	Batch ID: ML2051021			Test Code: 8021B/8015B				Date Analyzed: 10/21/05 00:00			
				Units: mg/m³				Date Prepared: N/A			
Benzene	5.000	0.50	5.000		100%	70	130				
Toluene	4.800	1.0	5.000		96%	70	130				
Ethylbenzene	4.200	1.0	5.000		84%	70	130				
Xylenes, total	11.91	1.5	15.00		79%	70	130				
TVFHC (C6-C10)	243.3	100	250.0		97%	70	130				
Bromofluorobenzene	8.800	0.50	10.00		88%	61	135				

TRANSWEST GEOCHEM

Sample Receipt Checklist

Client Name: Tucson

Date and Time Received: 10/20/05 1530

Work Order Number: 051031 5

Checked by: SIA

Checklist completed by: MM 10/21/05
Signature / Date

Logged In by: SIA 10/21/05
Initials / Date

Matrix: Soil Vapor Carrier Name: Client KQ Express

Reviewed by: MP 10/25
Initials / Date

				COMMENTS
Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑	
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	Temp: NA	Sampled < 2hrs ☐
Water – VOA vials have zero headspace?	Yes ☐	No ☐	N/A ☑	
Water – pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	
Water – Sulfides present in Cyanide samples?	Yes ☐	No ☐	N/A ☑	

Adjusted ? NA Checked by: NA

Client contacted: _____ Date contacted: _____ Person contacted: _____

Contacted by: _____ Regarding: _____

orrective Action: _____

TRANSWEST GEOCHEM

3725 E. Atlanta Ave., Ste 2
Phoenix, Arizona 85040
Phone: (602) 437-0330
Fax: (602) 437-0660

3860 S. Palo Verde Rd., Ste. 301
Tucson, Arizona 85714
Phone: (520) 573-1061
Fax: (520) 573-1063

Chain of Custody

TGI Work Order No: 0510315

Date 10/20/05 Page 1 of 1

Project Manager:	Molly Collins
Client Name:	COT-ES
Address:	
City, State ZIP:	
Phone:	Fax:

Bill to:	COT-ES
Company:	
Address:	
City, State ZIP:	
Phone:	Fax:

P.O. No.:	
Project Name:	TOOLE AVE.
Project Number:	

SAMPLE RECEIPT

Temperature:	21.4°C	Ice:	
Received Intact:	(Yes) No N/A	(Absent) / Present	
Custody Seals:	Yes (No) N/A	Wet / Blue	
Total No. of Containers:	3		

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Lab ID	No. of Containers	TPH, 8015AZR.1	BTEX (8021B)	Volatile Organics GCMS (624/8260AZ)	SDWA Volatiles, (524.2)	Semi-Volatile Organics GCMS (625/8270)	Organochlorine Pesticides (608/8081)	PCB's, (8082)	PAH, EPA 8310	8 RCRA Metals	Comments
Toole-EFF	VA	10/20	0815	01	1	X	X								
Toole-AD	VA	"	0820	02	1	X	X								
Toole-IN	VA	"	0825	03	1	X	X								

Relinquished by: (Signature)	(Print Name)	Received by: (Signature)	(Print Name)	Date/Time
1 Matt Wallace	Matt Wallace	Keith Konola	Keith Konola	10/20/05 10:05
2 Keith Konola	Keith Konola		Express IT	10/20/05 10:15
3	Express IT		Skye Hardin	10/21/05 1530

White copy to TGI, Yellow copy for final report, Pink copy to sampler

Revised : 7/21/2004

TRANSWEST GEOCHEM

November 09, 2006

Alison Jones
City of Tucson, Environmental Services
100 N. Stone, 2nd Floor, W. Side
Tucson, AZ 85701

RE: Toole

Work Order No.: 0610403

Dear Alison,

Transwest Geochem, Inc. received 2 samples on 10/26/06. The results of the analyses are presented in the following report.

The Case Narrative of this report addresses any Quality Control and/or Quality Assurance issues associated with this Work Order.

If you have any questions regarding these test results, please feel free to call us at (602) 437-0330.

Sincerely,

Matt Hill
Project Manager

ADHS License No. AZM133/AZ0133

3725 E. Atlanta Avenue • Phoenix, Arizona 85040 • (602) 437-0330 • (800) 927-5183 • Fax (602) 437-0660
3860 S. Palo Verde Rd. • Suite 301 • Tucson, Arizona 85714 • (520) 573-1061 • Fax (520) 573-1063
100% Recycled

TRANSWEST GEOCHEM

Client: City of Tucson, Environmental Services
Work Order: 0610403
Project Name: Toole
Project Number:

Date Printed: 09-Nov-06

Case Narrative

All method blanks, laboratory spikes, and/or matrix spikes met quality control objectives for the parameters associated with this Work Order except as detailed below or on the Data Qualifier page of this report. Data Qualifiers used in this report are in accordance with ADEQ Arizona Data Qualifiers, Revision 2.0 11/26/2003.

Data qualifiers ("flags") contained within this analytical report have been issued to explain a quality control deficiency, and do not affect the quality (validity) of the data unless noted otherwise in the case narrative.

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3860 S. Palo Verde Rd. • Suite 301 • Tucson, Arizona 85714 • (520) 573-1061 • Fax (520) 573-1063

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Date Printed 07-Nov-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Project Name: Toole
Project Number:
Work Order: 0610403
Date Received: 26-Oct-06

Case Narrative
Data Qualifiers

One or more of the following data qualifiers may be associated with your analytical and/or quality control data.

S6 Surrogate recovery was below laboratory and method acceptance limits. Reextraction and/or reanalysis confirms low recovery caused by matrix effect.

TRANSWEST GEOCHEM

Date Printed 07-Nov-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services

Project Name: Toole

Project Number:

Work Order: 0610403

Work Order Sample Summary

Client Sample ID	Lab Sample ID	Test Code	Collection Date	Date Received
Toole-102606-IN	0610403-01A	8021B/8015B	10/26/06 07:35 AM	10/26/06 08:45 AM
Toole-102606-EFF	0610403-02A	8021B/8015B	10/26/06 07:30 AM	10/26/06 08:45 AM

TRANSWEST GEOCHEM

Date Printed 07-Nov-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services

Project Name: Toole

Project Number:

Work Order: 0610403

Date Received: 26-Oct-06

Definitions

Analytical Spike (AS)	The AS is a known amount of a target analyte added to a sample after it has been distilled, digested, or extracted and is ready for analysis. The AS is generally performed if the MS has failed. It is used to indicate interference that arises from sample distillation, digestion, or extraction as opposed to interference that is innate to the matrix.
Continuing Curve Verification (CCV)	The CCV is also referred to as a curve check. This is a standard analyzed at specified intervals during an analysis. The CCV verifies the stability and accuracy of the calibration curve. There are specific CCV recovery acceptance criteria for each method.
Dilution Factor (DF)	The DF is an indication of how much a sample had to be diluted in order to quantitate it on a standard curve. The DF is indicated in the reported sample result. The sample PQL increases as the dilution increases.
Internal Standard (IS)	The IS is a compound that is similar to the organic compound of interest in terms of chemical composition but is unique in that it is rare in the environment. The same concentration of IS is added to every sample for some organic methods.
Laboratory Control Sample (LCS)	The LCS is also referred to as a blank spike. The LCS is an addition of a known amount of a target analyte (from the same source as calibration standards or spikes) to an aliquot of deionized water or other appropriate clean matrix. The LCS is processed through the entire method procedure in the same manner as samples.
Matrix Spike (MS)	The MS is a known amount of a target analyte added to a sample. The MS is processed through the entire method procedure in the same manner as samples.
Method Blank (MB)	The MB is an aliquot of deionized water or other appropriate clean matrix that is thought to be free of the analyte in question. The MB is processed through the entire extraction or analysis procedure and is used to indicate contamination in the lab.
Method Detection Limit (MDL)	The MDL is the lowest level of detection of which a method is capable.
Practical Quantitation Limit (PQL)	The PQL is the lowest value at which Transwest Geochem can detect an analyte in matrix with a high degree of confidence. The PQL will increase as the DF increases. The PQL is greater than or equal to the MDL.
Relative Percent Difference (RPD)	The RPD is a measure of precision (the ability to obtain the same result on re-analysis of the same sample). It is calculated using the result of a sample, MS, LCS, or LCSV and its associated duplicate result.
Secondary Source QC Sample (LCSV)	The LCSV is also referred to as a second source laboratory control sample. It is the same type of standard as a calibration or spiking standard but is obtained from a different source. The LCSV is an indication of the primary standard quality, method performance, and instrument performance.
Surrogate	A surrogate compound is similar to the organic compound of interest in terms of chemical composition but is unique in that it is rare in the environment. When surrogates are used, they are added to every sample, blank and standard. Surrogate recovery is used as an indication of extraction and/or analytical success.
Trip Blank (TB)	The TB is a portion of deionized water preserved in the same manner as the samples. The TB travels from the lab, to the field, and then back to the lab with the samples from the field. The TB serves as an indication of contamination introduced during sample transportation.

CLIENT: City of Tucson, Environmental Services
Project Name: Toole
Project Number:
Work Order: 0610403
Date Received: 26-Oct-06

References

Transwest Geochem, Inc. uses the methods outlined in the following references:

Code of Federal Regulations, 40CFR, Part 136, Appendix A, 1998.

Standard Methods for the Examination of Water and Wastewater, 19th Edition, 1995.

Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Revised March 1983.

Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, Revised August 1993.

Methods for the Determination of Metals in Environmental Samples, Supplement 1: EPA/600/R-94/111, Revised May 1994.

Methods for the Determination of Organic Compounds in Drinking Water, EPA/600/4-88/039, Revised July, 1991; EPA-600/4-90/020, Supplement I, July 1990; EPA-600/R-92/129; Supplement II, August 1992; EPA-600/R-95/131, Supplement III, August 1995.

Hach, Water Analysis Handbook, 3rd Edition, 1997.

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition, 1986 including Update I, July 1992; Update IIA, August 1993; Update II; September 1994; Update IIB, January 1995; Update III, December 1996

Bureau of Laboratory Services, State of Arizona Department of Health Services Method 418.1AZ: TPH in Soil, September 1994.

Bureau of Laboratory Services, State of Arizona Department of Health Services Method 8015AZ.R1, September 1998. (Comment: C6-C10 GRO reported by this method is not to be used in compliance situations)

ASTM MethodD4982, Annual Book of ASTM Standards, Volumes 11.01 and 11.02, 1995

The Determination of Polychlorinated Biphenyls in Transformer Fluid and Waste Oils, EPA-600 4-81-045, September 1982.

TRANSWEST GEOCHEM

Date Printed 07-Nov-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0610403
Lab ID: 0610403-01
Project Name: Toole
Project Number:

Client Sample ID: Toole-102606-IN
Collection Date: 10/26/2006 7:35:00 AM
Matrix: Air

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene	**5.3**	0.50		mg/m³	1.0	8021B/8015B	10/27/06	10/27/06	BK	3GC6061027
Benzene-ppmv	**1.66**	0.16		ppmv	1.00	8021B/8015B	10/27/06	10/27/06	BK	3GC6061027B
Toluene	**11**	1.0		mg/m³	1.0	8021B/8015B	10/27/06	10/27/06	BK	3GC6061027
Toluene-ppmv	**2.92**	0.27		ppmv	1.00	8021B/8015B	10/27/06	10/27/06	BK	3GC6061027B
Ethylbenzene	**8.6**	1.0		mg/m³	1.0	8021B/8015B	10/27/06	10/27/06	BK	3GC6061027
Ethylbenzene-ppmv	**1.98**	0.23		ppmv	1.00	8021B/8015B	10/27/06	10/27/06	BK	3GC6061027B
Xylenes, total	**45**	1.5		mg/m³	1.0	8021B/8015B	10/27/06	10/27/06	BK	3GC6061027
Xylenes, total-ppmv	**10.46**	0.35		ppmv	1.00	8021B/8015B	10/27/06	10/27/06	BK	3GC6061027B
TVFHC (C6-C10)	**1100**	100		mg/m³	1.0	8021B/8015B	10/27/06	10/27/06	BK	3GC6061027
TVFHC (C6-C10)-ppmv	**268.95**	24.00		ppmv	1.00	8021B/8015B	10/27/06	10/27/06	BK	3GC6061027B
Bromofluorobenzene(Surrogate)	104	56-140		%REC	1.0	8021B/8015B	10/27/06	10/27/06	BK	3GC6061027

TRANSWEST GEOCHEM

Date Printed 07-Nov-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0610403
Lab ID: 0610403-02
Project Name: Toole
Project Number:

Client Sample ID: Toole-102606-EFF
Collection Date: 10/26/2006 7:30:00 AM
Matrix: Air

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene	<0.50	0.50		mg/m³	1.0	8021B/8015B	10/27/06	10/27/06	BK	3GC6061027
Benzene-ppmv	<0.16	0.16		ppmv	1.00	8021B/8015B	10/27/06	10/27/06	BK	3GC6061027B
Toluene	<1.0	1.0		mg/m³	1.0	8021B/8015B	10/27/06	10/27/06	BK	3GC6061027
Toluene-ppmv	<0.27	0.27		ppmv	1.00	8021B/8015B	10/27/06	10/27/06	BK	3GC6061027B
Ethylbenzene	<1.0	1.0		mg/m³	1.0	8021B/8015B	10/27/06	10/27/06	BK	3GC6061027
Ethylbenzene-ppmv	<0.23	0.23		ppmv	1.00	8021B/8015B	10/27/06	10/27/06	BK	3GC6061027B
Xylenes, total	<1.5	1.5		mg/m³	1.0	8021B/8015B	10/27/06	10/27/06	BK	3GC6061027
Xylenes, total-ppmv	<0.35	0.35		ppmv	1.00	8021B/8015B	10/27/06	10/27/06	BK	3GC6061027B
TVFHC (C6-C10)	<100	100		mg/m³	1.0	8021B/8015B	10/27/06	10/27/06	BK	3GC6061027
TVFHC (C6-C10)-ppmv	<24.00	24.00		ppmv	1.00	8021B/8015B	10/27/06	10/27/06	BK	3GC6061027B
Bromofluorobenzene(Surrogate)	94	56-140		%REC	1.0	8021B/8015B	10/27/06	10/27/06	BK	3GC6061027

Date: 07-Nov-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0610403
Project: Toole

QC SUMMARY REPORT

Method Blank

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene-ppmv	<0.16	0.16		ppmv	1	8021B/8015B	10/27/06	10/27/06	BK	3GC6061027B
Toluene-ppmv	<0.27	0.27		ppmv	1	8021B/8015B	10/27/06	10/27/06	BK	3GC6061027B
Ethylbenzene-ppmv	<0.23	0.23		ppmv	1	8021B/8015B	10/27/06	10/27/06	BK	3GC6061027B
Xylenes, total-ppmv	<0.35	0.35		ppmv	1	8021B/8015B	10/27/06	10/27/06	BK	3GC6061027B
TVFHC (C6-C10)-ppmv	<24.00	24.00		ppmv	1	8021B/8015B	10/27/06	10/27/06	BK	3GC6061027B
Benzene	<0.50	0.50		mg/m³	1	8021B/8015B	10/27/06	10/27/06	BK	3GC6061027
Toluene	<1.0	1.0		mg/m³	1	8021B/8015B	10/27/06	10/27/06	BK	3GC6061027
Ethylbenzene	<1.0	1.0		mg/m³	1	8021B/8015B	10/27/06	10/27/06	BK	3GC6061027
Xylenes, total	<1.5	1.5		mg/m³	1	8021B/8015B	10/27/06	10/27/06	BK	3GC6061027
TVFHC (C6-C10)	<100	100		mg/m³	1	8021B/8015B	10/27/06	10/27/06	BK	3GC6061027
Bromofluorobenzene	00	56-140	S6	%REC	1	8021B/8015B	10/27/06	10/27/06	BK	3GC6061027

TRANSWEST GEOCHEM

Date: 07-Nov-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0610403
Project: Toole

QC SUMMARY REPORT

Sample Duplicate

Analyte	Result	PQL	Units	RPD Ref Val	% RPD	RPD Limit	Test Code	Date Prepared	Date Analyzed	Analyst	Qual
Sample ID: **0610397-05AD** Batch ID: 3GC6061027											
Client ID:											
Benzene	4.475	1.0	mg/m³	4.471	0%	30	8021B/8015B	10/27/06	10/27/06	BK	
Toluene	34.04	2.0	mg/m³	34.07	0%	30	8021B/8015B	10/27/06	10/27/06	BK	
Ethylbenzene	24.78	2.0	mg/m³	25.71	4%	30	8021B/8015B	10/27/06	10/27/06	BK	
Xylenes, total	151.94	3.0	mg/m³	157.2	3%	30	8021B/8015B	10/27/06	10/27/06	BK	
TVFHC (C6-C10)	1774	200	mg/m³	1723	3%	30	8021B/8015B	10/27/06	10/27/06	BK	
Sample ID: **0610403-01AD** Batch ID: 3GC6061027											
Client ID: **Toole-102606-IN**											
Benzene	5.000	0.50	mg/m³	5.300	6%	30	8021B/8015B	10/27/06	10/27/06	BK	
Toluene	10.00	1.0	mg/m³	11.00	10%	30	8021B/8015B	10/27/06	10/27/06	BK	
Ethylbenzene	8.000	1.0	mg/m³	8.600	7%	30	8021B/8015B	10/27/06	10/27/06	BK	
Xylenes, total	41.56	1.5	mg/m³	45.33	9%	30	8021B/8015B	10/27/06	10/27/06	BK	
TVFHC (C6-C10)	1100	100	mg/m³	1100	0%	30	8021B/8015B	10/27/06	10/27/06	BK	

Date: 07-Nov-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0610403
Project: Toole

QC SUMMARY REPORT

Blank Spike

Analyte	Result	PQL	SPK value	SPK Ref Val	% Rec	Low Limit	High Limit	RPD Ref Val	% RPD	RPD Limit	Qual
Sample ID: **LCS 10/27**	Batch ID: 3GC6061027			Test Code: 8021B/8015B				Date Analyzed: 10/27/06 00:00			
				Units: mg/m³				Date Prepared: 10/27/06			
Benzene	4.400	0.50	5.000		88%	70	130				
Toluene	5.500	1.0	5.000		110%	70	130				
Ethylbenzene	5.500	1.0	5.000		110%	70	130				
Xylenes, total	17.546	1.5	15.00		117%	70	130				
TVFHC (C6-C10)	260.0	100	250.0		104%	56	135				
Bromofluorobenzene	10.00	0.50	10.00		100%	56	140				

Storage Location: Mo

TRANSWEST GEOCHEM

Sample Receipt Checklist

Client Name: City of Tucson

Date and Time Received: 10.26.06 16.30

Work Order Number: 0610403

Checked by: EB

Checklist completed by: 10.26.06 (Signature / Date)

Logged In by: lm 10/27/06 (Initials / Date)

Matrix: MV Carrier Name: Client TGI ~~EXPRESS IT~~

Reviewed by: MOB 10/30/06 (Initials / Date)

				COMMENTS
Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑	
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	Temp: AMB	Sampled < 2hrs ☐
Water – VOA vials have zero headspace?	Yes ☐	No ☐	N/A ☑	
Water – pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	Checked by: EB
Water – Sulfides present in Cyanide samples?	Yes ☐	No ☐	N/A ☑	
Samples considered Drinking Water for metal analysis?	Yes ☐	No ☐	N/A ☑	

Client contacted: _____ Date contacted: _____ Person contacted: _____

Contacted by: _____ Regarding: _____

Corrective Action: _____

Sample Receipt Checklist

Client Name: City of Tucson - E.S.

Date and Time Received: 10/26/06 08:45

Work Order Number: 0610 403

Received by: Keith Konola

Checklist completed by: Keith K. 10/26/06
Signature / Date

Logged In by: _____
Initials / Date

Matrix: Air

Carrier Name: Verdad

Reviewed by: _____
Initials / Date

				COMMENTS
Shipping container/cooler in good condition?	Yes ☐	No ☐	Not Present ☑	
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑	
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐	N/A ☐	
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	Temp: 24.2°C → Tedlar Bags	
Water – VOA vials have zero headspace?	Yes ☐	No ☐	N/A ☑	
Water – pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	
Water – Sulfides present in Cyanide samples?	Yes ☐	No ☐	N/A ☑	

Adjusted ? _____ Checked by: _____

Client contacted: _____ Date contacted: _____ Person contacted: _____

Contacted by: _____ Regarding: _____

Corrective Action: _____

TRANSWEST GEOCHEM

3725 E. Atlanta Ave.
Phoenix, Arizona 85040
Phone: (602) 437-0330
Fax: (602) 437-0660

3860 S. Palo Verde Rd., Ste. 301
Tucson, Arizona 85714
Phone: (520) 573-1061
Fax: (520) 573-1063

Chain of Custod

TGI Work Order No: 0610 403

Date 10/26/06 Page 1 of 1

Project Manager:	Molly Collins
Client Name:	COT-ES
Address:	
City, State, Zip:	
Phone:	791-5414 Fax: -5417

Bill To:	COT ES
Company:	
Address:	
City, State, Zip:	
Phone:	Fax:

P.O. No.:	
Project Name:	TOOLE
Project Number:	

SAMPLE RECEIPT

Temperature:	24.2°C	Ice:
Received Intact:	Yes No N/A	Absent / Present
Custody Seals:	Yes No N/A	Wet / Blue
Total No. of Containers:	2	Sampled <2 hrs ago

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Lab ID	No. of Containers	TPH, (8015AZR.1)	BTEX (8021B)	Volatile Organics GCMS (624/8260B)	SDWA Volatiles, (524.2)	Semi-Volatile Organics GCMS (625/8270)	Organochlorine Pesticides (608/8081)	PCB's, (8082)	PAH, EPA (8310)	8 RCRA Metals	Comments
TOOLE·102606·IN	Air	10/26	0735	01	1	X	X								
Toole·102606·EFF	Air	10/26	0730	02	1	X	X								

	Relinquished by: (Signature)	(Print Name)	Received by: (Signature)	(Print Name)	Date / Time
1	[signature]	Geno Foushee	Keith Konola	Keith Konola	10/26/06 08:45
2	Keith Konola	Keith Konola		Express IT	10/26/06 09:30
3		Express IT	[signature]	Elorriac	10.26.06 16:30

White copy to TGI, Yellow copy for final report, Pink copy to sampler

Revised: 3/6/06

TRANSWEST GEOCHEM

November 03, 2005

RECEIVED
NOV 04 2005
ENVIRONMENTAL SERVICES
100 N. STONE AVE., 2ND FLOOR

Nancy Petersen
City of Tucson, Environmental Services
100 N. Stone, 2nd Floor, W. Side
Tucson, AZ 85701

RE: Toole

Work Order No.: 0510709

Dear Nancy,

Transwest Geochem, Inc. received 3 samples on 10/7/2005 11:55:00 AM for the analyses presented in the following report.

The Case Narrative of this report addresses any Quality Control and/or Quality Assurance issues associated with this Work Order.

A portion of the analysis was performed by Transwest Geochem Tucson ADHS License No. AZ0667.

If you have any questions regarding these test results, please feel free to call us at (602) 437-0330.

Sincerely,

Elizabeth Proffitt

Beth Proffitt
Project Manager

ADHS License No. AZM133/AZ0133

3725 E. Atlanta Ave. • Suite 2 • Phoenix, Arizona 85040 • (602) 437-0330 • 1-800-927-5183 • Fax (602) 437-0660
3860 S. Palo Verde Rd. • Suite 301 • Tucson, Arizona 85714 • (520) 573-1061 • Fax (520) 573-1063

TRANSWEST GEOCHEM

Client: City of Tucson, Environmental Services
Work Order: 0510709
Project Name: Toole
Project Number:

Date Printed: 03-Nov-05

Case Narrative

All method blanks, laboratory spikes, and/or matrix spikes met quality control objectives for the parameters associated with this Work Order except as detailed below or on the Data Qualifier page of this report. Data Qualifiers used in this report are in accordance with ADEQ Arizona Data Qualifiers, Revision 2.0 11/26/2003.

Data qualifiers ("flags") contained within this analytical report have been issued to explain a quality control deficiency, and do not affect the quality (validity) of the data unless noted otherwise in the case narrative.

3725 E. Atlanta Ave. • Suite 2 • Phoenix, Arizona 85040 • (602) 437-0330 • 1-800-927-5183 • Fax (602) 437-0660
3860 S. Palo Verde Rd. • Suite 301 • Tucson, Arizona 85714 • (520) 573-1061 • Fax (520) 573-1063

TRANSWEST GEOCHEM

Date Printed 02-Nov-05

License No. AZ0667

CLIENT: City of Tucson, Environmental Services

Project Name: Toole

Project Number:

Work Order: 0510709

Date Received: 07-Oct-05

Case Narrative
Data Qualifiers

One or more of the following data qualifiers may be associated with your analytical and/or quality control data.

D1 Sample required dilution due to matrix.

D2 Sample required dilution due to high concentration of target analyte.

TRANSWEST GEOCHEM

Date Printed 02-Nov-05
License No. AZ0667

CLIENT: City of Tucson, Environmental Services
Project Name: Toole
Project Number:
Work Order: 0510709
Date Received: 07-Oct-05

Work Order Sample Summary

Client Sample ID	Lab Sample ID	Test Code	Collection Date
Toole-PD IN	0510709-01A	8021B/8015B	10/7/2005 9:30:00 AM
Toole - IN	0510709-02A	8021B/8015B	10/7/2005 9:35:00 AM
Toole - Eff	0510709-03A	8021B/8015B	10/7/2005 9:40:00 AM

TRANSWEST GEOCHEM

Date Printed 02-Nov-05

License No. AZ0667

CLIENT: City of Tucson, Environmental Services
Project Name: Toole
Project Number:
Work Order: 0510709
Date Received: 07-Oct-05

Definitions

Analytical Spike (AS)	The AS is a known amount of a target analyte added to a sample after it has been distilled, digested, or extracted and is ready for analysis. The AS is generally performed if the MS has failed. It is used to indicate interference that arises from sample distillation, digestion, or extraction as opposed to interference that is innate to the matrix.
Continuing Curve Verification (CCV)	The CCV is also referred to as a curve check. This is a standard analyzed at specified intervals during an analysis. The CCV verifies the stability and accuracy of the calibration curve. There are specific CCV recovery acceptance criteria for each method.
Dilution Factor (DF)	The DF is an indication of how much a sample had to be diluted in order to quantitate it on a standard curve. The DF is indicated in the reported sample result. The sample PQL increases as the dilution increases.
Internal Standard (IS)	The IS is a compound that is similar to the organic compound of interest in terms of chemical composition but is unique in that it is rare in the environment. The same concentration of IS is added to every sample for some organic methods.
Laboratory Control Sample (LCS)	The LCS is also referred to as a blank spike. The LCS is an addition of a known amount of a target analyte (from the same source as calibration standards or spikes) to an aliquot of deionized water or other appropriate clean matrix. The LCS is processed through the entire method procedure in the same manner as samples.
Matrix Spike (MS)	The MS is a known amount of a target analyte added to a sample. The MS is processed through the entire method procedure in the same manner as samples.
Method Blank (MB)	The MB is an aliquot of deionized water or other appropriate clean matrix that is thought to be free of the analyte in question. The MB is processed through the entire extraction or analysis procedure and is used to indicate contamination in the lab.
Method Detection Limit (MDL)	The MDL is the lowest level of detection of which a method is capable.
Practical Quantitation Limit (PQL)	The PQL is the lowest value at which Transwest Geochem can detect an analyte in matrix with a high degree of confidence. The PQL will increase as the DF increases. The PQL is greater than or equal to the MDL.
Relative Percent Difference (RPD)	The RPD is a measure of precision (the ability to obtain the same result on re-analysis of the same sample). It is calculated using the result of a sample, MS, LCS, or LCSV and its associated duplicate result.
Secondary Source QC Sample (LCSV)	The LCSV is also referred to as a second source laboratory control sample. It is the same type of standard as a calibration or spiking standard but is obtained from a different source. The LCSV is an indication of the primary standard quality, method performance, and instrument performance.
Surrogate	A surrogate compound is similar to the organic compound of interest in terms of chemical composition but is unique in that it is rare in the environment. When surrogates are used, they are added to every sample, blank and standard. Surrogate recovery is used as an indication of extraction and/or analytical success.
Trip Blank (TB)	The TB is a portion of deionized water preserved in the same manner as the samples. The TB travels from the lab, to the field, and then back to the lab with the samples from the field. The TB serves as an indication of contamination introduced during sample transportation.

TRANSWEST GEOCHEM

Date Printed 02-Nov-05
License No. AZ0667

CLIENT: City of Tucson, Environmental Services
Project Name: Toole
Project Number:
Work Order: 0510709
Date Received: 07-Oct-05

References

Transwest Geochem, Inc. uses the methods outlined in the following references:

Code of Federal Regulations, 40CFR, Part 136, Appendix A, 1998.

Standard Methods for the Examination of Water and Wastewater, 19th Edition, 1995.

Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Revised March 1983.

Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, Revised August 1993.

Methods for the Determination of Metals in Environmental Samples, Supplement 1: EPA/600/R-94/111, Revised May 1994.

Methods for the Determination of Organic Compounds in Drinking Water, EPA/600/4-88/039, Revised July, 1991; EPA-600/4-90/020, Supplement I, July 1990; EPA-600/R-92/129; Supplement II, August 1992; EPA-600/R-95/131, Supplement III, August 1995.

Hach, Water Analysis Handbook, 3rd Edition, 1997.

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition, 1986 including Update I, July 1992; Update IIA, August 1993; Update II; September 1994; Update IIB, January 1995; Update III, December 1996

Bureau of Laboratory Services, State of Arizona Department of Health Services Method 418.1AZ: TPH in Soil, September 1994.

Bureau of Laboratory Services, State of Arizona Department of Health Services Method 8015AZ.R1, September 1998. (Comment: C6-C10 GRO reported by this method is not to be used in compliance situations)

ASTM MethodD4982, Annual Book of ASTM Standards, Volumes 11.01 and 11.02, 1995

The Determination of Polychlorinated Biphenyls in Transformer Fluid and Waste Oils, EPA-600 4-81-045, September 1982.

TRANSWEST GEOCHEM

Date Printed 02-Nov-05

License No. AZ0667

CLIENT: City of Tucson, Environmental Services
Work Order: 0510709
Lab ID: 0510709-01
Project Name: Toole
Project Number:

Client Sample ID: Toole-PD IN
Collection Date: 10/7/2005 9:30:00 AM
Matrix: Air

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene	**90**	2.5	D2	mg/m³	5.0	8021B/8015B	N/A	10/7/05	DH	GC1451003
Benzene-ppmv	**28.06**	0.80	D2	ppmv	5.00	8021B/8015B	N/A	10/7/05	DH	GC1451003B
Toluene	**210**	5.0	D2	mg/m³	5.0	8021B/8015B	N/A	10/7/05	DH	GC1451003
Toluene-ppmv	**56.02**	1.35	D2	ppmv	5.00	8021B/8015B	N/A	10/7/05	DH	GC1451003B
Ethylbenzene	**60**	5.0	D2	mg/m³	5.0	8021B/8015B	N/A	10/7/05	DH	GC1451003
Ethylbenzene-ppmv	**13.90**	1.15	D2	ppmv	5.00	8021B/8015B	N/A	10/7/05	DH	GC1451003B
Xylenes, total	**230**	7.5	D2	mg/m³	5.0	8021B/8015B	N/A	10/7/05	DH	GC1451003
Xylenes, total-ppmv	**52.70**	1.75	D2	ppmv	5.00	8021B/8015B	N/A	10/7/05	DH	GC1451003B
TVFHC (C6-C10)	**3000**	500	D2	mg/m³	5.0	8021B/8015B	N/A	10/7/05	DH	GC1451003
TVFHC (C6-C10)-ppmv	**722.67**	120.00	D2	ppmv	5.00	8021B/8015B	N/A	10/7/05	DH	GC1451003B
Bromofluorobenzene(Surrogate)	120	61-135		%REC	5.0	8021B/8015B	N/A	10/7/05	DH	GC1451003

TRANSWEST GEOCHEM

Date Printed 02-Nov-05

License No. AZ0667

CLIENT: City of Tucson, Environmental Services
Work Order: 0510709
Lab ID: 0510709-02
Project Name: Toole
Project Number:

Client Sample ID: Toole - IN
Collection Date: 10/7/2005 9:35:00 AM
Matrix: Air

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene	**96**	2.5	D2	mg/m³	5.0	8021B/8015B	N/A	10/7/05	DH	GC1451003
Benzene-ppmv	**30.21**	0.80	D2	ppmv	5.00	8021B/8015B	N/A	10/7/05	DH	GC1451003B
Toluene	**130**	20	D2	mg/m³	20	8021B/8015B	N/A	10/7/05	DH	GC1451003
Toluene-ppmv	**35.82**	10.80	D1	ppmv	20.00	8021B/8015B	N/A	10/7/05	DH	GC1451003B
Ethylbenzene	**92**	5.0	D2	mg/m³	5.0	8021B/8015B	N/A	10/7/05	DH	GC1451003
Ethylbenzene-ppmv	**21.14**	1.15	D2	ppmv	5.00	8021B/8015B	N/A	10/7/05	DH	GC1451003B
Xylenes, total	**380**	7.5	D2	mg/m³	5.0	8021B/8015B	N/A	10/7/05	DH	GC1451003
Xylenes, total-ppmv	**86.52**	1.75	D2	ppmv	5.00	8021B/8015B	N/A	10/7/05	DH	GC1451003B
TVFHC (C6-C10)	**3900**	500	D2	mg/m³	5.0	8021B/8015B	N/A	10/7/05	DH	GC1451003
TVFHC (C6-C10)-ppmv	**943.92**	120.00	D2	ppmv	5.00	8021B/8015B	N/A	10/7/05	DH	GC1451003B
Bromofluorobenzene(Surrogate)	124	61-135		%REC	5.0	8021B/8015B	N/A	10/7/05	DH	GC1451003

TRANSWEST GEOCHEM

Date Printed 02-Nov-05

License No. AZ0667

CLIENT: City of Tucson, Environmental Services
Work Order: 0510709
Lab ID: 0510709-03
Project Name: Toole
Project Number:

Client Sample ID: Toole - Eff
Collection Date: 10/7/2005 9:40:00 AM
Matrix: Air

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene	<0.50	0.50		mg/m³	1.0	8021B/8015B	N/A	10/7/05	DH	GC1451003
Benzene-ppmv	<0.16	0.16		ppmv	1.00	8021B/8015B	N/A	10/7/05	DH	GC1451003B
Toluene	**1.2**	1.0		mg/m³	1.0	8021B/8015B	N/A	10/7/05	DH	GC1451003
Toluene-ppmv	**0.32**	0.27		ppmv	1.00	8021B/8015B	N/A	10/7/05	DH	GC1451003B
Ethylbenzene	<1.0	1.0		mg/m³	1.0	8021B/8015B	N/A	10/7/05	DH	GC1451003
Ethylbenzene-ppmv	<0.23	0.23		ppmv	1.00	8021B/8015B	N/A	10/7/05	DH	GC1451003B
Xylenes, total	<1.5	1.5		mg/m³	1.0	8021B/8015B	N/A	10/7/05	DH	GC1451003
Xylenes, total-ppmv	<0.35	0.35		ppmv	1.00	8021B/8015B	N/A	10/7/05	DH	GC1451003B
TVFHC (C6-C10)	<100	100		mg/m³	1.0	8021B/8015B	N/A	10/7/05	DH	GC1451003
TVFHC (C6-C10)-ppmv	<24.00	24.00		ppmv	1.00	8021B/8015B	N/A	10/7/05	DH	GC1451003B
Bromofluorobenzene(Surrogate)	135	61-135		%REC	1.0	8021B/8015B	N/A	10/7/05	DH	GC1451003

TRANSWEST GEOCHEM

Date: 02-Nov-05

License No. AZ0667

CLIENT: City of Tucson, Environmental Services
Work Order: 0510709
Project: Toole

QC SUMMARY REPORT

Method Blank

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene-ppmv	<0.16	0.16		ppmv	1	8021B/8015B	N/A	10/3/05	DH	GC1451003B
Toluene-ppmv	<0.27	0.27		ppmv	1	8021B/8015B	N/A	10/3/05	DH	GC1451003B
Ethylbenzene-ppmv	<0.23	0.23		ppmv	1	8021B/8015B	N/A	10/3/05	DH	GC1451003B
Xylenes, total-ppmv	<0.35	0.35		ppmv	1	8021B/8015B	N/A	10/3/05	DH	GC1451003B
TVFHC (C6-C10)-ppmv	<24.00	24.00		ppmv	1	8021B/8015B	N/A	10/3/05	DH	GC1451003B
Benzene	<0.50	0.50		mg/m³	1	8021B/8015B	N/A	10/3/05	DH	GC1451003
Toluene	<1.0	1.0		mg/m³	1	8021B/8015B	N/A	10/3/05	DH	GC1451003
Ethylbenzene	<1.0	1.0		mg/m³	1	8021B/8015B	N/A	10/3/05	DH	GC1451003
Xylenes, total	<1.5	1.5		mg/m³	1	8021B/8015B	N/A	10/3/05	DH	GC1451003
TVFHC (C6-C10)	<100	100		mg/m³	1	8021B/8015B	N/A	10/3/05	DH	GC1451003
Bromofluorobenzene	125	61-135		%REC	1	8021B/8015B	N/A	10/3/05	DH	GC1451003
Benzene-ppmv	<0.16	0.16		ppmv	1	8021B/8015B	N/A	10/7/05	DH	GC1451003B
Toluene-ppmv	<0.27	0.27		ppmv	1	8021B/8015B	N/A	10/7/05	DH	GC1451003B
Ethylbenzene-ppmv	<0.23	0.23		ppmv	1	8021B/8015B	N/A	10/7/05	DH	GC1451003B
Xylenes, total-ppmv	<0.35	0.35		ppmv	1	8021B/8015B	N/A	10/7/05	DH	GC1451003B
TVFHC (C6-C10)-ppmv	<24.00	24.00		ppmv	1	8021B/8015B	N/A	10/7/05	DH	GC1451003B
Benzene	<0.50	0.50		mg/m³	1	8021B/8015B	N/A	10/7/05	DH	GC1451003
Toluene	<1.0	1.0		mg/m³	1	8021B/8015B	N/A	10/7/05	DH	GC1451003
Ethylbenzene	<1.0	1.0		mg/m³	1	8021B/8015B	N/A	10/7/05	DH	GC1451003
Xylenes, total	<1.5	1.5		mg/m³	1	8021B/8015B	N/A	10/7/05	DH	GC1451003
TVFHC (C6-C10)	<100	100		mg/m³	1	8021B/8015B	N/A	10/7/05	DH	GC1451003
Bromofluorobenzene	121	61-135		%REC	1	8021B/8015B	N/A	10/7/05	DH	GC1451003

TRANSWEST GEOCHEM

Date: 02-Nov-05

License No. AZ0667

CLIENT: City of Tucson, Environmental Services
Work Order: 0510709
Project: Toole

QC SUMMARY REPORT

Sample Duplicate

Analyte	Result	PQL	Units	RPD Ref Val	% RPD	RPD Limit	Test Code	Date Prepared	Date Analyzed	Analyst	Qual
Sample ID: **0510702-07AD**		Batch ID: GC1451003									
Client ID:											
Benzene	<0.50	0.50	mg/m³	<0.50	0%	30	8021B/8015B	N/A	10/3/05	DH	
Toluene	1.562	1.0	mg/m³	1.219	25%	30	8021B/8015B	N/A	10/3/05	DH	
Ethylbenzene	<1.0	1.0	mg/m³	<1.0	0%	30	8021B/8015B	N/A	10/3/05	DH	
Xylenes, total	<1.5	1.5	mg/m³	<1.5	0%	30	8021B/8015B	N/A	10/3/05	DH	
TVFHC (C6-C10)	<100	100	mg/m³	<100	0%	30	8021B/8015B	N/A	10/3/05	DH	
Sample ID: **0510709-01AD**		Batch ID: GC1451003									
Client ID: **Toole-PD IN**											
Benzene	95.07	2.5	mg/m³	89.53	6%	30	8021B/8015B	N/A	10/7/05	DH	
Toluene	242.3	5.0	mg/m³	210.8	14%	30	8021B/8015B	N/A	10/7/05	DH	
Ethylbenzene	75.13	5.0	mg/m³	60.28	22%	30	8021B/8015B	N/A	10/7/05	DH	
Xylenes, total	299.96	7.5	mg/m³	228.5	27%	30	8021B/8015B	N/A	10/7/05	DH	
TVFHC (C6-C10)	3346	500	mg/m³	2956	12%	30	8021B/8015B	N/A	10/7/05	DH	

TRANSWEST GEOCHEM

Date: 02-Nov-05

License No. AZ0667

CLIENT: City of Tucson, Environmental Services
Work Order: 0510709
Project: Toole

QC SUMMARY REPORT

Blank Spike

Analyte	Result	PQL	SPK value	SPK Ref Val	% Rec	Low Limit	High Limit	RPD Ref Val	% RPD	RPD Limit	Qual
Sample ID: **LCS 10/3/2005**	Batch ID: GC1451003			Test Code: 8021B/8015B				Date Analyzed: 10/03/05 00:00			
				Units mg/m³				Date Prepared: N/A			
Benzene	5.251	0.50	5.000		105%	70	130				
Toluene	5.139	1.0	5.000		103%	70	130				
Ethylbenzene	5.163	1.0	5.000		103%	70	130				
Xylenes, total	15.317	1.5	15.00		102%	70	130				
TVFHC (C6-C10)	439.9	100	500.0		88%	70	130				
Bromofluorobenzene	10.16	0.50	10.00		102%	61	135				
Sample ID: **LCS 10/7/2005**	Batch ID: GC1451003			Test Code: 8021B/8015B				Date Analyzed: 10/07/05 00:00			
				Units mg/m³				Date Prepared: N/A			
Methyl tert-butyl ether	4.073	1.5	5.000		81%	70	130				
Benzene	5.198	0.50	5.000		104%	70	130				
Toluene	5.067	1.0	5.000		101%	70	130				
Ethylbenzene	5.041	1.0	5.000		101%	70	130				
Xylenes, total	14.921	1.5	15.00		99%	70	130				
TVFHC (C6-C10)	380.6	100	500.0		76%	70	130				
Bromofluorobenzene	10.52	0.50	10.00		105%	61	135				

TRANSWEST GEOCHEM

3725 E. Atlanta Ave., Ste 2
Phoenix, Arizona 85040
Phone: (602) 437-0330
Fax: (602) 437-0660

3860 S. Palo Verde Rd., Ste. 301
Tucson, Arizona 85714
Phone: (520) 573-1061
Fax: (520) 573-1063

Chain of Custody

TGI Work Order No: 0510709

Date 10/7/05 Page 1 of 1

Project Manager:	Molly Collins
Client Name:	City of Rescue Environmental Services
Address:	
City, State ZIP:	
Phone:	Fax:

Bill to:	COT ES
Company:	
Address:	
City, State ZIP:	
Phone:	Fax:

P.O. No.:	
Project Name:	Toole
Project Number:	

SAMPLE RECEIPT

Temperature:	22.0 °C	Ice:	
Received Intact:	(Yes) No N/A	(Absent) / Present	
Custody Seals:	Yes (No) N/A	Wet / Blue	
Total No. of Containers:	3		

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Lab ID	No. of Containers	TPH, 8015AZR.1	BTEX (8021B)	Volatile Organics GCMS (624/8260AZ)	SDWA Volatiles, (524.2)	Semi-Volatile Organics GCMS (625/8270)	Organochlorine Pesticides (608/8081)	PCB's, (8082)	PAH, EPA 8310	8 RCRA Metals	Comments
Toole-PDIN	VA	10/7/05	0930	1	1	X	X								
Toole-IN	"	"	0935	2	1	X	X								
Toole-EFF	"	"	0940	3	1	X	X								

	Relinquished by: (Signature)	(Print Name)	Received by: (Signature)	(Print Name)	Date/Time
1	MATT WALLACE	MATT WALLACE	Keith Konolo	Keith Konolo	10/7/05 11:55
2					
3					

White copy to TGI, Yellow copy for final report, Pink copy to sampler

Revised : 7/21/2004

TRANSWEST GEOCHEM

October 11, 2006

RECEIVED

OCT 12, 2006

ENVIRONMENTAL SERVICES
100 N. STONE AVE., 2ND FLOOR

Alison Jones
City of Tucson, Environmental Services
100 N. Stone, 2nd Floor, W. Side
Tucson, AZ 85701

RE: Toole

Work Order No.: 0609517

Dear Alison,

Transwest Geochem, Inc. received 2 samples on 9/28/06. The results of the analyses are presented in the following report.

The Case Narrative of this report addresses any Quality Control and/or Quality Assurance issues associated with this Work Order.

If you have any questions regarding these test results, please feel free to call us at (602) 437-0330.

Sincerely,

Matt Hill
Project Manager

ADHS License No. AZM133/AZ0133

3725 E. Atlanta Avenue • Phoenix, Arizona 85040 • (602) 437-0330 • (800) 927-5183 • Fax (602) 437-0660
3860 S. Palo Verde Rd. • Suite 301 • Tucson, Arizona

TRANSWEST GEOCHEM

Client: City of Tucson, Environmental Services
Work Order: 0609517
Project Name: Toole
Project Number:

Date Printed: 11-Oct-06

Case Narrative

All method blanks, laboratory spikes, and/or matrix spikes met quality control objectives for the parameters associated with this Work Order except as detailed below or on the Data Qualifier page of this report. Data Qualifiers used in this report are in accordance with ADEQ Arizona Data Qualifiers, Revision 2.0 11/26/2003.

Data qualifiers ("flags") contained within this analytical report have been issued to explain a quality control deficiency, and do not affect the quality (validity) of the data unless noted otherwise in the case narrative.

Analytical Comments for Method 8021B/8015B, Sample 0609517-01, Batch 5GC8060929: S10-Surrogate recovery was above laboratory and method acceptance limits due to matrix interference from coeluding, non target compounds.

3725 E. Atlanta Avenue • Phoenix, Arizona 85040 • (602) 437-0330 • (800) 927-5183 • Fax (602) 437-0660
3860 S. Palo Verde Rd. • Suite 301 • Tucson, Arizona 85714 • (520) 777-

Date Printed 10-Oct-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Project Name: Toole
Project Number:
Work Order: 0609517
Date Received: 28-Sep-06

Case Narrative
Data Qualifiers

One or more of the following data qualifiers may be associated with your analytical and/or quality control data.

S10 Surrogate recovery was above laboratory and method acceptance limits. See Case Narrative.

TRANSWEST GEOCHEM

Date Printed 10-Oct-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services

Project Name: Toole

Project Number:

Work Order: 0609517

Work Order Sample Summary

Client Sample ID	Lab Sample ID	Test Code	Collection Date	Date Received
TOOLE-092806-IN	0609517-01A	8021B/8015B	9/28/06 06:30 AM	9/28/06 07:35 AM
TOOLE-092806-EFF	0609517-02A	8021B/8015B	9/28/06 06:35 AM	9/28/06 07:35 AM

TRANSWEST GEOCHEM

Date Printed 10-Oct-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Project Name: Toole
Project Number:
Work Order: 0609517
Date Received: 28-Sep-06

Definitions

Analytical Spike (AS)	The AS is a known amount of a target analyte added to a sample after it has been distilled, digested, or extracted and is ready for analysis. The AS is generally performed if the MS has failed. It is used to indicate interference that arises from sample distillation, digestion, or extraction as opposed to interference that is innate to the matrix.
Continuing Curve Verification (CCV)	The CCV is also referred to as a curve check. This is a standard analyzed at specified intervals during an analysis. The CCV verifies the stability and accuracy of the calibration curve. There are specific CCV recovery acceptance criteria for each method.
Dilution Factor (DF)	The DF is an indication of how much a sample had to be diluted in order to quantitate it on a standard curve. The DF is indicated in the reported sample result. The sample PQL increases as the dilution increases.
Internal Standard (IS)	The IS is a compound that is similar to the organic compound of interest in terms of chemical composition but is unique in that it is rare in the environment. The same concentration of IS is added to every sample for some organic methods.
Laboratory Control Sample (LCS)	The LCS is also referred to as a blank spike. The LCS is an addition of a known amount of a target analyte (from the same source as calibration standards or spikes) to an aliquot of deionized water or other appropriate clean matrix. The LCS is processed through the entire method procedure in the same manner as samples.
Matrix Spike (MS)	The MS is a known amount of a target analyte added to a sample. The MS is processed through the entire method procedure in the same manner as samples.
Method Blank (MB)	The MB is an aliquot of deionized water or other appropriate clean matrix that is thought to be free of the analyte in question. The MB is processed through the entire extraction or analysis procedure and is used to indicate contamination in the lab.
Method Detection Limit (MDL)	The MDL is the lowest level of detection of which a method is capable.
Practical Quantitation Limit (PQL)	The PQL is the lowest value at which Transwest Geochem can detect an analyte in matrix with a high degree of confidence. The PQL will increase as the DF increases. The PQL is greater than or equal to the MDL.
Relative Percent Difference (RPD)	The RPD is a measure of precision (the ability to obtain the same result on re-analysis of the same sample). It is calculated using the result of a sample, MS, LCS, or LCSV and its associated duplicate result.
Secondary Source QC Sample (LCSV)	The LCSV is also referred to as a second source laboratory control sample. It is the same type of standard as a calibration or spiking standard but is obtained from a different source. The LCSV is an indication of the primary standard quality, method performance, and instrument performance.
Surrogate	A surrogate compound is similar to the organic compound of interest in terms of chemical composition but is unique in that it is rare in the environment. When surrogates are used, they are added to every sample, blank and standard. Surrogate recovery is used as an indication of extraction and/or analytical success.
Trip Blank (TB)	The TB is a portion of deionized water preserved in the same manner as the samples. The TB travels from the lab, to the field, and then back to the lab with the samples from the field. The TB serves as an indication of contamination introduced during sample transportation.

Date Printed 10-Oct-06
License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Project Name: Toole
Project Number:
Work Order: 0609517
Date Received: 28-Sep-06

References

Transwest Geochem, Inc. uses the methods outlined in the following references:

Code of Federal Regulations, 40CFR, Part 136, Appendix A, 1998.

Standard Methods for the Examination of Water and Wastewater, 19th Edition, 1995.

Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Revised March 1983.

Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, Revised August 1993.

Methods for the Determination of Metals in Environmental Samples, Supplement 1: EPA/600/R-94/111, Revised May 1994.

Methods for the Determination of Organic Compounds in Drinking Water, EPA/600/4-88/039, Revised July, 1991; EPA-600/4-90/020, Supplement I, July 1990; EPA-600/R-92/129; Supplement II, August 1992; EPA-600/R-95/131, Supplement III, August 1995.

Hach, Water Analysis Handbook, 3rd Edition, 1997.

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition, 1986 including Update I, July 1992; Update IIA, August 1993; Update II; September 1994; Update IIB, January 1995; Update III, December 1996

Bureau of Laboratory Services, State of Arizona Department of Health Services Method 418.1AZ: TPH in Soil, September 1994.

Bureau of Laboratory Services, State of Arizona Department of Health Services Method 8015AZ.R1, September 1998. (Comment: C6-C10 GRO reported by this method is not to be used in compliance situations)

ASTM MethodD4982, Annual Book of ASTM Standards, Volumes 11.01 and 11.02, 1995

The Determination of Polychlorinated Biphenyls in Transformer Fluid and Waste Oils, EPA-600 4-81-045, September 1982.

TRANSWEST GEOCHEM

Date Printed 10-Oct-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0609517
Lab ID: 0609517-01
Project Name: Toole
Project Number:

Client Sample ID: TOOLE-092806-IN
Collection Date: 9/28/2006 6:30:00 AM
Matrix: Air

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene	**4.4**	0.50		mg/m³	1.0	8021B/8015B	N/A	9/29/06	JPM	5GC8060929
Benzene-ppmv	**1.38**	0.16		ppmv	1.00	8021B/8015B	N/A	9/29/06	JPM	5GC8060929B
Toluene	**18**	1.0		mg/m³	1.0	8021B/8015B	N/A	9/29/06	JPM	5GC8060929
Toluene-ppmv	**4.68**	0.27		ppmv	1.00	8021B/8015B	N/A	9/29/06	JPM	5GC8060929B
Ethylbenzene	**11**	1.0		mg/m³	1.0	8021B/8015B	N/A	9/29/06	JPM	5GC8060929
Ethylbenzene-ppmv	**2.51**	0.23		ppmv	1.00	8021B/8015B	N/A	9/29/06	JPM	5GC8060929B
Xylenes, total	**49**	1.5		mg/m³	1.0	8021B/8015B	N/A	9/29/06	JPM	5GC8060929
Xylenes, total-ppmv	**11.24**	0.35		ppmv	1.00	8021B/8015B	N/A	9/29/06	JPM	5GC8060929B
TVFHC (C6-C10)	**870**	100		mg/m³	1.0	8021B/8015B	N/A	9/29/06	JPM	5GC8060929
TVFHC (C6-C10)-ppmv	**213.35**	24.00		ppmv	1.00	8021B/8015B	N/A	9/29/06	JPM	5GC8060929B
Bromofluorobenzene(Surrogate)	140	70-130	S10	%REC	1.0	8021B/8015B	N/A	9/29/06	JPM	5GC8060929

Confidential and Privileged

TRANSWEST GEOCHEM

Date Printed 10-Oct-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0609517
Lab ID: 0609517-02
Project Name: Toole
Project Number:

Client Sample ID: TOOLE-092806-EFF
Collection Date: 9/28/2006 6:35:00 AM
Matrix: Air

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene	<0.50	0.50		mg/m³	1.0	8021B/8015B	N/A	9/29/06	JPM	5GC8060929
Benzene-ppmv	<0.16	0.16		ppmv	1.00	8021B/8015B	N/A	9/29/06	JPM	5GC8060929B
Toluene	<1.0	1.0		mg/m³	1.0	8021B/8015B	N/A	9/29/06	JPM	5GC8060929
Toluene-ppmv	<0.27	0.27		ppmv	1.00	8021B/8015B	N/A	9/29/06	JPM	5GC8060929B
Ethylbenzene	<1.0	1.0		mg/m³	1.0	8021B/8015B	N/A	9/29/06	JPM	5GC8060929
Ethylbenzene-ppmv	<0.23	0.23		ppmv	1.00	8021B/8015B	N/A	9/29/06	JPM	5GC8060929B
Xylenes, total	**2.8**	1.5		mg/m³	1.0	8021B/8015B	N/A	9/29/06	JPM	5GC8060929
Xylenes, total-ppmv	**0.65**	0.35		ppmv	1.00	8021B/8015B	N/A	9/29/06	JPM	5GC8060929B
TVFHC (C6-C10)	<100	100		mg/m³	1.0	8021B/8015B	N/A	9/29/06	JPM	5GC8060929
TVFHC (C6-C10)-ppmv	<24.00	24.00		ppmv	1.00	8021B/8015B	N/A	9/29/06	JPM	5GC8060929B
Bromofluorobenzene(Surrogate)	105	70-130		%REC	1.0	8021B/8015B	N/A	9/29/06	JPM	5GC8060929

Confidential and Privileged

Date: 10-Oct-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0609517
Project: Toole

QC SUMMARY REPORT

Method Blank

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene-ppmv	<0.16	0.16		ppmv	1	8021B/8015B	N/A	9/29/06	JPM	5GC8060929B
Toluene-ppmv	<0.27	0.27		ppmv	1	8021B/8015B	N/A	9/29/06	JPM	5GC8060929B
Ethylbenzene-ppmv	<0.23	0.23		ppmv	1	8021B/8015B	N/A	9/29/06	JPM	5GC8060929B
Xylenes, total-ppmv	<0.35	0.35		ppmv	1	8021B/8015B	N/A	9/29/06	JPM	5GC8060929B
TVFHC (C6-C10)-ppmv	<24.00	24.00		ppmv	1	8021B/8015B	N/A	9/29/06	JPM	5GC8060929B
Benzene	<0.50	0.50		mg/m³	1	8021B/8015B	N/A	9/29/06	JPM	5GC8060929
Toluene	<1.0	1.0		mg/m³	1	8021B/8015B	N/A	9/29/06	JPM	5GC8060929
Ethylbenzene	<1.0	1.0		mg/m³	1	8021B/8015B	N/A	9/29/06	JPM	5GC8060929
Xylenes, total	<1.5	1.5		mg/m³	1	8021B/8015B	N/A	9/29/06	JPM	5GC8060929
TVFHC (C6-C10)	<100	100		mg/m³	1	8021B/8015B	N/A	9/29/06	JPM	5GC8060929
Bromofluorobenzene	106	70-130		%REC	1	8021B/8015B	N/A	9/29/06	JPM	5GC8060929

TRANSWEST GEOCHEM

Date: 10-Oct-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0609517
Project: Toole

QC SUMMARY REPORT

Sample Duplicate

Analyte	Result	PQL	Units	RPD Ref Val	% RPD	RPD Limit	Test Code	Date Prepared	Date Analyzed	Analyst	Qual
Sample ID: **0609517-01AD**		Batch ID: 5GC8060929									
Client ID: **TOOLE-092806-IN**											
Benzene	3.500	0.50	mg/m³	4.400	23%	30	8021B/8015B	N/A	9/29/06	JPM	
Toluene	14.30	1.0	mg/m³	17.60	21%	30	8021B/8015B	N/A	9/29/06	JPM	
Ethylbenzene	8.900	1.0	mg/m³	10.90	20%	30	8021B/8015B	N/A	9/29/06	JPM	
Xylenes, total	40.88	1.5	mg/m³	48.75	18%	30	8021B/8015B	N/A	9/29/06	JPM	
TVFHC (C6-C10)	691.1	100	mg/m³	872.6	23%	30	8021B/8015B	N/A	9/29/06	JPM	

TRANSWEST GEOCHEM

Date: 10-Oct-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0609517
Project: Toole

QC SUMMARY REPORT

Blank Spike

Analyte	Result	PQL	SPK value	SPK Ref Val	% Rec	Low Limit	High Limit	RPD Ref Val	% RPD	RPD Limit	Qual
Sample ID: **LCS 9/29**	Batch ID: 5GC8060929			Test Code: 8021B/8015B				Date Analyzed: 09/29/06 00:00			
				Units: mg/m³				Date Prepared: N/A			
Benzene	5.600	0.50	5.000		112%	70	130				
Toluene	5.400	1.0	5.000		108%	70	130				
Ethylbenzene	5.300	1.0	5.000		106%	70	130				
Xylenes, total	15.893	1.5	15.00		106%	70	130				
TVFHC (C6-C10)	278.6	100	250.0		111%	70	130				
Bromofluorobenzene	10.50	0.50	10.00		105%	70	130				

Storage Location: ML-MO

TRANSWEST GEOCHEM

Sample Receipt Checklist

Client Name: City of Tucson

Date and Time Received: 9/28/06 1515

Work Order Number: 0609517

Checked by: lm

Checklist completed by: Leslie May 9/29/06
Signature / Date

Logged In by: [illegible] 9.29.06
Initials / Date

Matrix: Air Carrier Name: Client TGI Express It Reviewed by: [illegible] 10/4/06
Initials / Date

				COMMENTS
Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑	
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Container/Temp Blank temperature in compliance?	Yes ☐	No ☐	Temp: Amb	Sampled < 2hrs ☐
Water – VOA vials have zero headspace?	Yes ☐	No ☐	N/A ☐	
Water – pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☐	Checked by: _____
Water – Sulfides present in Cyanide samples?	Yes ☐	No☐	N/A ☐	
Samples considered Drinking Water for metal analysis?	Yes ☐	No☐	N/A ☐	

Client contacted: _____ Date contacted: _____ Person contacted: _____

Contacted by: _____ Regarding: _____

Corrective Action: _____

TRANSWEST GEOCHEM

Sample Receipt Checklist

Client Name: COT-ES

Date and Time Received: 9/28/06 7:35

Work Order Number: 0609517

Received by: Keith Konola

Checklist completed by: Kerri Collins 9/28/06
Signature / Date

Logged In by: _____
Initials / Date

Matrix: Air

Carrier Name: Client

Reviewed by: _____
Initials / Date

				COMMENTS
Shipping container/cooler in good condition?	Yes ☒	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☒	
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☒	
Chain of custody present?	Yes ☒	No ☐		
Chain of custody signed when relinquished and received?	Yes ☒	No ☐		
Chain of custody agrees with sample labels?	Yes ☒	No ☐		
Samples in proper container/bottle?	Yes ☒	No ☐	N/A ☐	
Sample containers intact?	Yes ☒	No ☐		
Sufficient sample volume for indicated test?	Yes ☒	No ☐		
All samples received within holding time?	Yes ☒	No ☐		
Container/Temp Blank temperature in compliance?	Yes ☒	No ☐	Temp: 23.0°C	* Air Samples
Water – VOA vials have zero headspace?	Yes ☐	No ☐	N/A ☒	
Water – pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☒	
Water – Sulfides present in Cyanide samples?	Yes ☐	No ☐	N/A ☒	

Adjusted ? _____ Checked by: _____

Client contacted: _____ Date contacted: _____ Person contacted: _____

Contacted by: _____ Regarding: _____

Corrective Action: _____

TRANSWEST GEOCHEM

3725 E. Atlanta Ave.
Phoenix, Arizona 85040
Phone: (602) 437-0330
Fax: (602) 437-0660

3860 S. Palo Verde Rd., Ste. 301
Tucson, Arizona 85714
Phone: (520) 573-1061
Fax: (520) 573-1063

Chain of Custody

TGI Work Order No: 0609517

Date 9.28.06 Page 1 of 1

Project Manager:	Molly Collins
Client Name:	COT-ES
Address:	
City, State, Zip:	
Phone:	791-5414 Fax: 791-5415

Bill To:	COT-ES
Company:	
Address:	
City, State, Zip:	
Phone:	Fax:

P.O. No.:	
Project Name:	TOOLE
Project Number:	

SAMPLE RECEIPT

Temperature:	23.0°C	Ice:	
Received Intact:	Yes No N/A	Absent / Present	
Custody Seals:	Yes No N/A	Wet / Blue	
Total No. of Containers:	2	Sampled <2 hrs ago	

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Lab ID	No. of Containers	TPH, (8015AZR.1)	BTEX (8021B)	Volatile Organics GCMS (624/8260B)	SDWA Volatiles, (524.2)	Semi-Volatile Organics GCMS (625/8270)	Organochlorine Pesticides (608/8081)	PCB's, (8082)	PAH, EPA (8310)	8 RCRA Metals	Comments
TOOLE-097806-IN	Air	9/28/06	0630	01	1	X	X								
Toole-097806-EFF	Air	9/28/06	0635	02	1	X	X								

Relinquished by: (Signature)	(Print Name)	Received by: (Signature)	(Print Name)	Date / Time
1	GENO FOUSHEE	Keith Kanola	Keith Kanola	9/28/06 07:35
2 Terri Collins	Terri Collins		Express It	9/28/06 11:00
3	Express It	Leslie May - TGI	Leslie May	9-28-06 1515

temp. 2.7°C

White copy to TGI, Yellow copy for final report, Pink copy to sampler

Revised: 3/6/06

TRANSWEST GEOCHEM

September 30, 2005

Nancy Petersen
City of Tucson, Environmental Services
100 N. Stone, 2nd Floor, W. Side
Tucson, AZ 85701

RE: Toole Ave

Work Order No.: 0509292

Dear Nancy,

Transwest Geochem, Inc. received 3 samples on 9/22/2005 11:14:00 AM for the analyses presented in the following report.

The Case Narrative of this report addresses any Quality Control and/or Quality Assurance issues associated with this Work Order.

If you have any questions regarding these test results, please feel free to call us at (602) 437-0330.

Sincerely,

Elizabeth Proffitt

Beth Proffitt
Project Manager

ADHS License No. AZM133/AZ0133

3725 E. Atlanta Ave. • Suite 2 • Phoenix, Arizona 85040 • (602) 437-0330 • 1-800-927-5183 • Fax (602) 437-0660
3860 S. Palo Verde Rd. • Suite 301 • Tucson, Arizona 85714 • (520) 573-1061 • Fax (520) 573-1063

Client: City of Tucson, Environmental Services
Work Order: 0509292
Project Name: Toole Ave
Project Number:

Date Printed: 30-Sep-05

Case Narrative

All method blanks, laboratory spikes, and sample duplicates met quality control objectives for the parameters associated with this Work Order except as detailed below or on the Data Qualifier page of this report. Data Qualifiers used in this report are in accordance with ADEQ Arizona Data Qualifiers, Revision 1.0 05/13/2002.

Data qualifiers ("flags") contained within this analytical report have been issued to explain a quality control deficiency, and do not affect the quality (validity) of the data unless noted otherwise in the case narrative.

The vapor analysis performed by Transwest Geochem, Inc. is a screening technique based on a modified EPA method. This data is not to be used in compliance situations.

3725 E. Atlanta Ave. • Suite 2 • Phoenix, Arizona 85040 • (602) 437-0330 • 1-800-927-5183 • Fax (602) 437-0660
3860 S. Palo Verde Rd. • Suite 301 • Tucson, Arizona 85714 • (520) 573-1061 • Fax (520) 573-1063

TRANSWEST GEOCHEM

Date Printed 28-Sep-05

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services

Project Name: Toole Ave

Project Number:

Work Order: 0509292

Date Received: 22-Sep-05

Case Narrative
Data Qualifiers

One or more of the following data qualifiers may be associated with your analytical and/or quality control data.

D2 Sample required dilution due to high concentration of target analyte.

TRANSWEST GEOCHEM

Date Printed 28-Sep-05

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services

Project Name: Toole Ave

Project Number:

Work Order: 0509292

Date Received: 22-Sep-05

Work Order Sample Summary

Client Sample ID	Lab Sample ID	Test Code	Collection Date
Toole-Eff-092205	0509292-01A	8021B/8015B	9/22/2005 9:00:00 AM
Toole-Inf-092205	0509292-02A	8021B/8015B	9/22/2005 9:05:00 AM
Toole-PD-092205	0509292-03A	8021B/8015B	9/22/2005 9:10:00 AM

TRANSWEST GEOCHEM

Date Printed 28-Sep-05

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Project Name: Toole Ave
Project Number:
Work Order: 0509292
Date Received: 22-Sep-05

Definitions

Analytical Spike (AS)	The AS is a known amount of a target analyte added to a sample after it has been distilled, digested, or extracted and is ready for analysis. The AS is generally performed if the MS has failed. It is used to indicate interference that arises from sample distillation, digestion, or extraction as opposed to interference that is innate to the matrix.
Continuing Curve Verification (CCV)	The CCV is also referred to as a curve check. This is a standard analyzed at specified intervals during an analysis. The CCV verifies the stability and accuracy of the calibration curve. There are specific CCV recovery acceptance criteria for each method.
Dilution Factor (DF)	The DF is an indication of how much a sample had to be diluted in order to quantitate it on a standard curve. The DF is indicated in the reported sample result. The sample PQL increases as the dilution increases.
Internal Standard (IS)	The IS is a compound that is similar to the organic compound of interest in terms of chemical composition but is unique in that it is rare in the environment. The same concentration of IS is added to every sample for some organic methods.
Laboratory Control Sample (LCS)	The LCS is also referred to as a blank spike. The LCS is an addition of a known amount of a target analyte (from the same source as calibration standards or spikes) to an aliquot of deionized water or other appropriate clean matrix. The LCS is processed through the entire method procedure in the same manner as samples.
Matrix Spike (MS)	The MS is a known amount of a target analyte added to a sample. The MS is processed through the entire method procedure in the same manner as samples.
Method Blank (MB)	The MB is an aliquot of deionized water or other appropriate clean matrix that is thought to be free of the analyte in question. The MB is processed through the entire extraction or analysis procedure and is used to indicate contamination in the lab.
Method Detection Limit (MDL)	The MDL is the lowest level of detection of which a method is capable.
Practical Quantitation Limit (PQL)	The PQL is the lowest value at which Transwest Geochem can detect an analyte in matrix with a high degree of confidence. The PQL will increase as the DF increases. The PQL is greater than or equal to the MDL.
Relative Percent Difference (RPD)	The RPD is a measure of precision (the ability to obtain the same result on re-analysis of the same sample). It is calculated using the result of a sample, MS, LCS, or LCSV and its associated duplicate result.
Secondary Source QC Sample (LCSV)	The LCSV is also referred to as a second source laboratory control sample. It is the same type of standard as a calibration or spiking standard but is obtained from a different source. The LCSV is an indication of the primary standard quality, method performance, and instrument performance.
Surrogate	A surrogate compound is similar to the organic compound of interest in terms of chemical composition but is unique in that it is rare in the environment. When surrogates are used, they are added to every sample, blank and standard. Surrogate recovery is used as an indication of extraction and/or analytical success.
Trip Blank (TB)	The TB is a portion of deionized water preserved in the same manner as the samples. The TB travels from the lab, to the field, and then back to the lab with the samples from the field. The TB serves as an indication of contamination introduced during sample transportation.

TRANSWEST GEOCHEM

Date Printed 28-Sep-05

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Project Name: Toole Ave
Project Number:
Work Order: 0509292
Date Received: 22-Sep-05

References

Transwest Geochem, Inc. uses the methods outlined in the following references:

Code of Federal Regulations, 40CFR, Part 136, Appendix A, 1998.

Standard Methods for the Examination of Water and Wastewater, 19th Edition, 1995.

Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Revised March 1983.

Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, Revised August 1993.

Methods for the Determination of Metals in Environmental Samples, Supplement 1: EPA/600/R-94/111, Revised May 1994.

Methods for the Determination of Organic Compounds in Drinking Water, EPA/600/4-88/039, Revised July, 1991; EPA-600/4-90/020, Supplement I, July 1990; EPA-600/R-92/129; Supplement II, August 1992; EPA-600/R-95/131, Supplement III, August 1995.

Hach, Water Analysis Handbook, 3rd Edition, 1997.

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition, 1986 including Update I, July 1992; Update IIA, August 1993; Update II; September 1994; Update IIB, January 1995; Update III, December 1996

Bureau of Laboratory Services, State of Arizona Department of Health Services Method 418.1AZ: TPH in Soil, September 1994.

Bureau of Laboratory Services, State of Arizona Department of Health Services Method 8015AZ.R1, September 1998. (Comment: C6-C10 GRO reported by this method is not to be used in compliance situations)

ASTM MethodD4982, Annual Book of ASTM Standards, Volumes 11.01 and 11.02, 1995

The Determination of Polychlorinated Biphenyls in Transformer Fluid and Waste Oils, EPA-600 4-81-045, September 1982.

TRANSWEST GEOCHEM

Date Printed 29-Sep-05

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0509292
Lab ID: 0509292-01
Project Name: Toole Ave
Project Number:

Client Sample ID: Toole-Eff-092205
Collection Date: 9/22/2005 9:00:00 AM
Matrix: Soil Vapor

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene	**1.8**	0.50		mg/m³	1.0	8021B/8015B	N/A	9/22/05	BK	3GC6050622
Benzene-ppmv	**0.56**	0.16		ppmv	1.00	8021B/8015B	N/A	9/22/05	BK	3GC6050622B
Toluene	<1.0	1.0		mg/m³	1.0	8021B/8015B	N/A	9/22/05	BK	3GC6050622
Toluene-ppmv	<0.27	0.27		ppmv	1.00	8021B/8015B	N/A	9/22/05	BK	3GC6050622B
Ethylbenzene	<1.0	1.0		mg/m³	1.0	8021B/8015B	N/A	9/22/05	BK	3GC6050622
Ethylbenzene-ppmv	<0.23	0.23		ppmv	1.00	8021B/8015B	N/A	9/22/05	BK	3GC6050622B
Xylenes, total	<1.5	1.5		mg/m³	1.0	8021B/8015B	N/A	9/22/05	BK	3GC6050622
Xylenes, total-ppmv	<0.35	0.35		ppmv	1.00	8021B/8015B	N/A	9/22/05	BK	3GC6050622B
TVFHC (C6-C10)	<100	100		mg/m³	1.0	8021B/8015B	N/A	9/22/05	BK	3GC6050622
TVFHC (C6-C10)-ppmv	<24.00	24.00		ppmv	1.00	8021B/8015B	N/A	9/22/05	BK	3GC6050622B
Bromofluorobenzene(Surrogate)	97	61-135		%REC	1.0	8021B/8015B	N/A	9/22/05	BK	3GC6050622

TRANSWEST GEOCHEM

Date Printed 29-Sep-05

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0509292
Lab ID: 0509292-02
Project Name: Toole Ave
Project Number:

Client Sample ID: Toole-Inf-092205
Collection Date: 9/22/2005 9:05:00 AM
Matrix: Soil Vapor

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene	210	10	D2	mg/m³	20	8021B/8015B	N/A	9/22/05	BK	3GC6050622
Benzene-ppmv	65.28	3.20	D2	ppmv	20.00	8021B/8015B	N/A	9/22/05	BK	3GC6050622B
Toluene	440	20	D2	mg/m³	20	8021B/8015B	N/A	9/22/05	BK	3GC6050622
Toluene-ppmv	117.24	5.40	D2	ppmv	20.00	8021B/8015B	N/A	9/22/05	BK	3GC6050622B
Ethylbenzene	120	20	D2	mg/m³	20	8021B/8015B	N/A	9/22/05	BK	3GC6050622
Ethylbenzene-ppmv	27.33	4.60	D2	ppmv	20.00	8021B/8015B	N/A	9/22/05	BK	3GC6050622B
Xylenes, total	450	30	D2	mg/m³	20	8021B/8015B	N/A	9/22/05	BK	3GC6050622
Xylenes, total-ppmv	104.68	7.00	D2	ppmv	20.00	8021B/8015B	N/A	9/22/05	BK	3GC6050622B
TVFHC (C6-C10)	7900	2000	D2	mg/m³	20	8021B/8015B	N/A	9/22/05	BK	3GC6050622
TVFHC (C6-C10)-ppmv	1931.9	480.00	D2	ppmv	20.00	8021B/8015B	N/A	9/22/05	BK	3GC6050622B
Bromofluorobenzene(Surrogate)	111	61-135		%REC	20	8021B/8015B	N/A	9/22/05	BK	3GC6050622

TRANSWEST GEOCHEM

Date Printed 29-Sep-05

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0509292
Lab ID: 0509292-03
Project Name: Toole Ave
Project Number:

Client Sample ID: Toole-PD-092205
Collection Date: 9/22/2005 9:10:00 AM
Matrix: Soil Vapor

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene	180	10	D2	mg/m³	20	8021B/8015B	N/A	9/22/05	BK	3GC6050622
Benzene-ppmv	56.56	3.20	D2	ppmv	20.00	8021B/8015B	N/A	9/22/05	BK	3GC6050622B
Toluene	420	20	D2	mg/m³	20	8021B/8015B	N/A	9/22/05	BK	3GC6050622
Toluene-ppmv	110.76	5.40	D2	ppmv	20.00	8021B/8015B	N/A	9/22/05	BK	3GC6050622B
Ethylbenzene	110	20	D2	mg/m³	20	8021B/8015B	N/A	9/22/05	BK	3GC6050622
Ethylbenzene-ppmv	26.28	4.60	D2	ppmv	20.00	8021B/8015B	N/A	9/22/05	BK	3GC6050622B
Xylenes, total	440	30	D2	mg/m³	20	8021B/8015B	N/A	9/22/05	BK	3GC6050622
Xylenes, total-ppmv	102.59	7.00	D2	ppmv	20.00	8021B/8015B	N/A	9/22/05	BK	3GC6050622B
TVFHC (C6-C10)	8500	2000	D2	mg/m³	20	8021B/8015B	N/A	9/22/05	BK	3GC6050622
TVFHC (C6-C10)-ppmv	2078.2	480.00	D2	ppmv	20.00	8021B/8015B	N/A	9/22/05	BK	3GC6050622B
Bromofluorobenzene(Surrogate)	104	61-135		%REC	20	8021B/8015B	N/A	9/22/05	BK	3GC6050622

TRANSWEST GEOCHEM

Date: 29-Sep-05

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0509292
Project: Toole Ave

QC SUMMARY REPORT

Method Blank

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene-ppmv	<0.16	0.16		ppmv	1	8021B/8015B	N/A	9/22/05	BK	3GC6050622B
Toluene-ppmv	<0.27	0.27		ppmv	1	8021B/8015B	N/A	9/22/05	BK	3GC6050622B
Ethylbenzene-ppmv	<0.23	0.23		ppmv	1	8021B/8015B	N/A	9/22/05	BK	3GC6050622B
Xylenes, total-ppmv	<0.35	0.35		ppmv	1	8021B/8015B	N/A	9/22/05	BK	3GC6050622B
TVFHC (C6-C10)-ppmv	<24.00	24.00		ppmv	1	8021B/8015B	N/A	9/22/05	BK	3GC6050622B
Benzene	<0.50	0.50		mg/m³	1	8021B/8015B	N/A	9/22/05	BK	3GC6050622B
Toluene	<1.0	1.0		mg/m³	1	8021B/8015B	N/A	9/22/05	BK	3GC6050622
Ethylbenzene	<1.0	1.0		mg/m³	1	8021B/8015B	N/A	9/22/05	BK	3GC6050622
Xylenes, total	<1.5	1.5		mg/m³	1	8021B/8015B	N/A	9/22/05	BK	3GC6050622
TVFHC (C6-C10)	<100	100		mg/m³	1	8021B/8015B	N/A	9/22/05	BK	3GC6050622
Bromofluorobenzene	107	61-135		%REC	1	8021B/8015B	N/A	9/22/05	BK	3GC6050622

TRANSWEST GEOCHEM

Date: 29-Sep-05

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0509292
Project: Toole Ave

QC SUMMARY REPORT

Sample Duplicate

Analyte	Result	PQL	Units	RPD Ref Val	% RPD	RPD Limit	Test Code	Date Prepared	Date Analyzed	Analyst	Qual
Sample ID: **0509292-03AD**		Batch ID: 3GC6050622									
Client ID: **Toole-PD-092205**											
Benzene	175.4	10	mg/m³	180.5	3%	30	8021B/8015B	N/A	9/22/05	BK	
Toluene	394.7	20	mg/m³	416.8	5%	30	8021B/8015B	N/A	9/22/05	BK	
Ethylbenzene	106.6	20	mg/m³	114.0	7%	30	8021B/8015B	N/A	9/22/05	BK	
Xylenes, total	412.57	30	mg/m³	444.8	8%	30	8021B/8015B	N/A	9/22/05	BK	
TVFHC (C6-C10)	8600	2000	mg/m³	8500	1%	30	8021B/8015B	N/A	9/22/05	BK	

TRANSWEST GEOCHEM

Date: 29-Sep-05

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0509292
Project: Toole Ave

QC SUMMARY REPORT

Blank Spike

Analyte	Result	PQL	SPK value	SPK Ref Val	% Rec	Low Limit	High Limit	RPD Ref Val	% RPD	RPD Limit	Qual
Sample ID: LCS 9/22	Batch ID: 3GC6050622			Test Code: 8021B/8015B				Date Analyzed: 09/22/05 00:00			
				Units mg/m³				Date Prepared: N/A			
Benzene	4.900	0.50	5.000		98%	70	130				
Toluene	5.300	1.0	5.000		106%	70	130				
Ethylbenzene	5.300	1.0	5.000		106%	70	130				
Xylenes, total	16.587	1.5	15.00		111%	70	130				
TVFHC (C6-C10)	260.0	100	250.0		104%	70	130				
Bromofluorobenzene	10.10	0.50	10.00		101%	61	135				

TRANSWEST GEOCHEM

3725 E. Atlanta Ave., Ste 2
Phoenix, Arizona 85040
Phone: (602) 437-0330
Fax: (602) 437-0660

3860 S. Palo Verde Rd., Ste. 301
Tucson, Arizona 85714
Phone: (520) 573-1061
Fax: (520) 573-1063

Chain of Custody

TGI Work Order No: 0509292
Date 9-22-05 Page 1 of 1

Project Manager:	Molly Collins
Client Name:	City of TUCSON ES
Address:	
City, State ZIP:	
Phone:	Fax:

Bill to:	COT ES
Company:	
Address:	
City, State ZIP:	
Phone:	Fax:

P.O. No.:	
Project Name:	Toole Ave
Project Number:	

SAMPLE RECEIPT

Temperature:	22.0°C	Ice:	
Received Intact:	Yes No N/A	Absent / Present	
Custody Seals:	Yes No N/A	Wet / Blue	
Total No. of Containers:	3		

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Lab ID	No. of Containers	TPH, 8015AZR.1	BTEX (8021B)	Volatile Organics GCMS (624/8260AZ)	SDWA Volatiles, (524.2)	Semi-Volatile Organics GCMS (625/8270)	Organochlorine Pesticides (608/8081)	PCB's, (8082)	PAH, EPA 8310	8 RCRA Metals	Comments
Toole-EFF-092205	VA	9/22/05	0900	1	1	X	X								
Toole-INF-092205	VA	9/22/05	0905	2	1	X	X								
Toole-PD-092205	VA	9/22/05	0910	3	1	X	X								

Relinquished by: (Signature)	(Print Name)	Received by: (Signature)	(Print Name)	Date/Time
1 Matt Wallace	Matt Wallace	Keith Konola	Keith Konola	9/22/05 11:14
2 Keith Konola	Keith Konola	Blake Kenny	Blake Kenny	9/22/05 1610
3				

White copy to TGI, Yellow copy for final report, Pink copy to sampler

Revised : 7/21/2004

Aerotech Environmental Laboratories

a division of Aerotech Laboratories, Inc.

Thursday, September 29, 2005

RECEIVED

OCT 04 2005

ENVIRONMENTAL SERVICES
100 N. STONE AVE., 2ND FLOOR

Molly Collins
City of Tucson
100 North Stone Avenue
2nd Floor
Tucson, AZ 85701

TEL: (520) 791-5414
FAX (520) 791-5417

RE: 35 E. Toole

Order No.: 05090181

Dear Molly Collins:

Aerotech Environmental received 2 sample(s) on 9/22/2005 for the analyses presented in the following report.

This report includes the following information:
- Case Narrative.
- Analytical Report: includes test results, report limit (Limit), any applicable data qualifier (Qual), units, dilution factor (DF), and date analyzed.
- QC Summary Report.

This communication is intended only for the individual or entity to whom it is directed. It may contain information that is privileged, confidential, or otherwise exempt from disclosure under applicable law. Dissemination, distribution, or copying of this communication by anyone other than the intended recipient, or a duly designated employee or agent of such recipient, is prohibited. If you have received this communication in error, please notify us immediately and destroy this message and all attachments thereto. If you have any questions regarding these test results, please do not hesitate to call.

Sincerely,

KRVault

Korky Vault
Service Center Manager

Aerotech Environmental Laboratories

a division of Aerotech Laboratories, Inc.

Aerotech Environmental **Date:** *29-Sep-05*

CLIENT: City of Tucson
Project: 35 E. Toole
Lab Order: 05090181

CASE NARRATIVE

Samples were analyzed using methods outlined in references such as:

Standard Methods for the Examination of Water and Wastewater, 19th Edition, 1995.

Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Revised March 1983.

Methods for the Determination of Organic Compounds in Drinking Water: Supplement III, EPA/600/R-95/131, August 1995.

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition.

40 CFR, Part 136, Revised 1998. Appendix A to Part 136 - Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater.

NIOSH Manual of Analytical Methods, Fourth Edition, 1994.

Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, Second Edition, 1999.

Aerotech Environmental Laboratories (AEL) holds Arizona certification no. AZ0610 and AEL-Tucson holds Arizona certification no. AZ0609.

Aerotech Environmental Laboratories (Laboratory ID 154268) is accredited by the American Industrial Hygiene Association (AIHA) in the industrial hygiene program for the analytical techniques noted on the scope of accreditation.

Analytical Comments:

All method blanks and laboratory control spikes met EPA method and/or laboratory quality control objectives for the analyses included in this report.

Data Qualifiers:
Listed below are the data qualifiers used in your analytical report to explain any analytical or quality control issues. You will find them noted in your report under the column header "QUAL". Any quality control deficiencies that cannot be adequately described by these qualifiers will be addressed in the analytical comments section of this case narrative.

D2 Sample required dilution due to high concentration of target analyte.

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Aerotech Environmental

Date: *29-Sep-05*

CLIENT:	City of Tucson	**Client Sample ID:**	Toole-Eff-092205
Lab Order:	05090181	**Tag Number:**	00233
Project:	35 E. Toole	**Collection Date:**	9/22/2005 9:15:00 AM
Lab ID:	05090181-01A	**Matrix:**	AIR

	ppbv		µg/L				
Analyses	**Result**	**Limit**	**Result**	**Limit**	**Qual**	**DF**	**Date Analyzed**
VOLATILE ORGANICS IN AIR		TO15					Analyst: SP
1,1,1-Trichloroethane	< 2.5	2.5	< 0.014	0.014		5	9/24/2005
1,1,2,2-Tetrachloroethane	< 2.5	2.5	< 0.017	0.017		5	9/24/2005
1,1,2-Trichloroethane	< 2.5	2.5	< 0.014	0.014		5	9/24/2005
1,1-Dichloroethane	< 2.5	2.5	< 0.010	0.010		5	9/24/2005
1,1-Dichloroethene	< 2.5	2.5	< 0.010	0.010		5	9/24/2005
1,2,4-Trichlorobenzene	< 5.0	5.0	< 0.038	0.038		5	9/24/2005
1,2,4-Trimethylbenzene	< 2.5	2.5	< 0.012	0.012		5	9/24/2005
1,2-Dibromoethane	< 2.5	2.5	< 0.020	0.020		5	9/24/2005
1,2-Dichlorobenzene	< 2.5	2.5	< 0.015	0.015		5	9/24/2005
1,2-Dichloroethane	< 2.5	2.5	< 0.010	0.010		5	9/24/2005
1,2-Dichloropropane	< 2.5	2.5	< 0.012	0.012		5	9/24/2005
1,3,5-Trimethylbenzene	< 2.5	2.5	< 0.012	0.012		5	9/24/2005
1,3-Butadiene	< 2.5	2.5	< 0.0056	0.0056		5	9/24/2005
1,3-Dichlorobenzene	< 2.5	2.5	< 0.015	0.015		5	9/24/2005
1,4-Dichlorobenzene	< 2.5	2.5	< 0.015	0.015		5	9/24/2005
2,2,4-Trimethylpentane	< 2.5	2.5	< 0.012	0.012		5	9/24/2005
2-Butanone (MEK)	< 5.0	5.0	< 0.015	0.015		5	9/24/2005
2-Hexanone	< 5.0	5.0	< 0.021	0.021		5	9/24/2005
2-Propanol	< 5.0	5.0	< 0.012	0.012		5	9/24/2005
4-Ethyltoluene	< 2.5	2.5	< 0.011	0.011		5	9/24/2005
4-Methyl-2-pentanone	< 5.0	5.0	< 0.021	0.021		5	9/24/2005
Acetone	< 25	25	< 0.060	0.060		5	9/24/2005
Allyl chloride	< 2.5	2.5	< 0.0040	0.0040		5	9/24/2005
Benzene	280	5.0	0.91	0.016	D2	10	9/24/2005
Benzyl chloride	< 10	10	< 0.053	0.053		5	9/24/2005
Bromodichloromethane	< 2.5	2.5	< 0.017	0.017		5	9/24/2005

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

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Aerotech Environmental

Date: *29-Sep-05*

CLIENT: City of Tucson
Lab Order: 05090181
Project: 35 E. Toole
Lab ID: 05090181-01A

Client Sample ID: Toole-Eff-092205
Tag Number: 00233
Collection Date: 9/22/2005 9:15:00 AM
Matrix: AIR

Analyses	ppbv Result	ppbv Limit	µg/L Result	µg/L Limit	Qual	DF	Date Analyzed
VOLATILE ORGANICS IN AIR		TO15					Analyst: SP
Bromoethene(Vinyl Bromide)	< 2.5	2.5	< 0.0056	0.0056		5	9/24/2005
Bromoform	< 2.5	2.5	< 0.026	0.026		5	9/24/2005
Bromomethane	< 2.5	2.5	< 0.0099	0.0099		5	9/24/2005
Carbon disulfide	< 2.5	2.5	< 0.0079	0.0079		5	9/24/2005
Carbon tetrachloride	< 2.5	2.5	< 0.016	0.016		5	9/24/2005
Chlorobenzene	< 2.5	2.5	< 0.012	0.012		5	9/24/2005
Chloroethane	< 2.5	2.5	< 0.0067	0.0067		5	9/24/2005
Chloroform	< 2.5	2.5	< 0.012	0.012		5	9/24/2005
Chloromethane	< 2.5	2.5	< 0.0052	0.0052		5	9/24/2005
cis-1,2-Dichloroethene	< 2.5	2.5	< 0.010	0.010		5	9/24/2005
cis-1,3-Dichloropropene	< 2.5	2.5	< 0.012	0.012		5	9/24/2005
Cyclohexane	< 2.5	2.5	< 0.0087	0.0087		5	9/24/2005
Dibromochloromethane	< 2.5	2.5	< 0.022	0.022		5	9/24/2005
Dichlorodifluoromethane(F-12)	< 2.5	2.5	< 0.013	0.013		5	9/24/2005
Dichlorotetrafluoroethane(F-114)	< 2.5	2.5	< 0.018	0.018		5	9/24/2005
Ethyl Acetate	< 2.5	2.5	< 0.0092	0.0092		5	9/24/2005
Ethylbenzene	< 2.5	2.5	< 0.011	0.011		5	9/24/2005
Heptane	< 2.5	2.5	< 0.010	0.010		5	9/24/2005
Hexachlorobutadiene	< 5.0	5.0	< 0.054	0.054		5	9/24/2005
Hexane	< 2.5	2.5	< 0.0089	0.0089		5	9/24/2005
m&p-Xylene	< 5.0	5.0	< 0.022	0.022		5	9/24/2005
Methyl tert-butyl ether	< 5.0	5.0	< 0.018	0.018		5	9/24/2005
Methylene chloride	< 2.5	2.5	< 0.0088	0.0088		5	9/24/2005
o-Xylene	< 2.5	2.5	< 0.011	0.011		5	9/24/2005
Propene (Propylene)	220	2.5	0.38	0.0044	D2	5	9/24/2005
Styrene	< 2.5	2.5	< 0.011	0.011		5	9/24/2005

Qualifiers:
ND - Not Detected at the Reporting Limit
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* - Value exceeds Maximum Contaminant Level
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R - RPD outside accepted recovery limits
E - Value above quantitation range

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Aerotech Environmental

Date: *29-Sep-05*

CLIENT:	City of Tucson	**Client Sample ID:**	Toole-Eff-092205
Lab Order:	05090181	**Tag Number:**	00233
Project:	35 E. Toole	**Collection Date:**	9/22/2005 9:15:00 AM
Lab ID:	05090181-01A	**Matrix:**	AIR

	ppbv		µg/L				
Analyses	**Result**	**Limit**	**Result**	**Limit**	**Qual**	**DF**	**Date Analyzed**
VOLATILE ORGANICS IN AIR		TO15					Analyst: SP
Tetrachloroethene	< 2.5	2.5	< 0.017	0.017		5	9/24/2005
Tetrahydrofuran	< 10	10	< 0.030	0.030		5	9/24/2005
Toluene	14	2.5	0.054	0.0096		5	9/24/2005
trans-1,2-Dichloroethene	< 2.5	2.5	< 0.010	0.010		5	9/24/2005
trans-1,3-Dichloropropene	< 2.5	2.5	< 0.012	0.012		5	9/24/2005
Trichloroethene	< 2.5	2.5	< 0.014	0.014		5	9/24/2005
Trichlorofluoromethane(F-11)	< 2.5	2.5	< 0.014	0.014		5	9/24/2005
Trichlorotrifluoroethane(F-113)	< 2.5	2.5	< 0.019	0.019		5	9/24/2005
Vinyl acetate	< 2.5	2.5	< 0.0089	0.0089		5	9/24/2005
Vinyl chloride	< 2.5	2.5	< 0.0065	0.0065		5	9/24/2005
Surr: 4-Bromofluorobenzene	96.2 %REC	70-130	-	-		5	9/24/2005

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
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R - RPD outside accepted recovery limits
E - Value above quantitation range

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Date: *29-Sep-05*

CLIENT:	City of Tucson	**Client Sample ID:**	Toole-Inf-092205
Lab Order:	05090181	**Tag Number:**	00616
Project:	35 E. Toole	**Collection Date:**	9/22/2005 9:20:00 AM
Lab ID:	05090181-02A	**Matrix:**	AIR

	ppbv		µg/L				
Analyses	**Result**	**Limit**	**Result**	**Limit**	**Qual**	**DF**	**Date Analyzed**
VOLATILE ORGANICS IN AIR		TO15					Analyst: SP
1,1,1-Trichloroethane	< 10000	10000	< 55	55		20000	9/24/2005
1,1,2,2-Tetrachloroethane	< 10000	10000	< 70	70		20000	9/24/2005
1,1,2-Trichloroethane	< 10000	10000	< 55	55		20000	9/24/2005
1,1-Dichloroethane	< 10000	10000	< 41	41		20000	9/24/2005
1,1-Dichloroethene	< 10000	10000	< 40	40		20000	9/24/2005
1,2,4-Trichlorobenzene	< 20000	20000	< 150	150		20000	9/24/2005
1,2,4-Trimethylbenzene	73000	10000	360	50	D2	20000	9/24/2005
1,2-Dibromoethane	< 10000	10000	< 78	78		20000	9/24/2005
1,2-Dichlorobenzene	< 10000	10000	< 61	61		20000	9/24/2005
1,2-Dichloroethane	< 10000	10000	< 41	41		20000	9/24/2005
1,2-Dichloropropane	< 10000	10000	< 47	47		20000	9/24/2005
1,3,5-Trimethylbenzene	23000	10000	110	50	D2	20000	9/24/2005
1,3-Butadiene	< 10000	10000	< 22	22		20000	9/24/2005
1,3-Dichlorobenzene	< 10000	10000	< 61	61		20000	9/24/2005
1,4-Dichlorobenzene	< 10000	10000	< 61	61		20000	9/24/2005
2,2,4-Trimethylpentane	210000	10000	1000	47	D2	20000	9/24/2005
2-Butanone (MEK)	< 20000	20000	< 60	60		20000	9/24/2005
2-Hexanone	< 20000	20000	< 83	83		20000	9/24/2005
2-Propanol	< 20000	20000	< 50	50		20000	9/24/2005
4-Ethyltoluene	21000	10000	93	44	D2	20000	9/24/2005
4-Methyl-2-pentanone	< 20000	20000	< 83	83		20000	9/24/2005
Acetone	< 100000	100000	< 240	240		20000	9/24/2005
Allyl chloride	< 10000	10000	< 16	16		20000	9/24/2005
Benzene	91000	10000	300	32	D2	20000	9/24/2005
Benzyl chloride	< 40000	40000	< 210	210		20000	9/24/2005
Bromodichloromethane	< 10000	10000	< 68	68		20000	9/24/2005

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

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Aerotech Environmental

Date: *29-Sep-05*

CLIENT:	City of Tucson	**Client Sample ID:**	Toole-Inf-092205
Lab Order:	05090181	**Tag Number:**	00616
Project:	35 E. Toole	**Collection Date:**	9/22/2005 9:20:00 AM
Lab ID:	05090181-02A	**Matrix:**	AIR

	ppbv		µg/L				
Analyses	**Result**	**Limit**	**Result**	**Limit**	**Qual**	**DF**	**Date Analyzed**
VOLATILE ORGANICS IN AIR		TO15					Analyst: SP
Bromoethene(Vinyl Bromide)	< 10000	10000	< 22	22		20000	9/24/2005
Bromoform	< 10000	10000	< 100	100		20000	9/24/2005
Bromomethane	< 10000	10000	< 40	40		20000	9/24/2005
Carbon disulfide	< 10000	10000	< 32	32		20000	9/24/2005
Carbon tetrachloride	< 10000	10000	< 64	64		20000	9/24/2005
Chlorobenzene	< 10000	10000	< 47	47		20000	9/24/2005
Chloroethane	< 10000	10000	< 27	27		20000	9/24/2005
Chloroform	< 10000	10000	< 50	50		20000	9/24/2005
Chloromethane	< 10000	10000	< 21	21		20000	9/24/2005
cis-1,2-Dichloroethene	< 10000	10000	< 40	40		20000	9/24/2005
cis-1,3-Dichloropropene	< 10000	10000	< 46	46		20000	9/24/2005
Cyclohexane	82000	10000	290	35	D2	20000	9/24/2005
Dibromochloromethane	< 10000	10000	< 86	86		20000	9/24/2005
Dichlorodifluoromethane(F-12)	< 10000	10000	< 50	50		20000	9/24/2005
Dichlorotetrafluoroethane(F-114)	< 10000	10000	< 71	71		20000	9/24/2005
Ethyl Acetate	< 10000	10000	< 37	37		20000	9/24/2005
Ethylbenzene	74000	10000	330	44	D2	20000	9/24/2005
Heptane	68000	10000	280	42	D2	20000	9/24/2005
Hexachlorobutadiene	< 20000	20000	< 220	220		20000	9/24/2005
Hexane	61000	10000	220	36	D2	20000	9/24/2005
m&p-Xylene	270000	20000	1200	88	D2	20000	9/24/2005
Methyl tert-butyl ether	180000	20000	660	73	D2	20000	9/24/2005
Methylene chloride	< 10000	10000	< 35	35		20000	9/24/2005
o-Xylene	81000	10000	360	44	D2	20000	9/24/2005
Propene (Propylene)	< 10000	10000	< 18	18		20000	9/24/2005
Styrene	< 10000	10000	< 43	43		20000	9/24/2005

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

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Aerotech Environmental

Date: *29-Sep-05*

CLIENT:	City of Tucson	**Client Sample ID:**	Toole-Inf-092205
Lab Order:	05090181	**Tag Number:**	00616
Project:	35 E. Toole	**Collection Date:**	9/22/2005 9:20:00 AM
Lab ID:	05090181-02A	**Matrix:**	AIR

	ppbv		µg/L				
Analyses	**Result**	**Limit**	**Result**	**Limit**	**Qual**	**DF**	**Date Analyzed**
VOLATILE ORGANICS IN AIR		TO15					Analyst: SP
Tetrachloroethene	< 10000	10000	< 69	69		20000	9/24/2005
Tetrahydrofuran	< 40000	40000	< 120	120		20000	9/24/2005
Toluene	280000	10000	1100	38	D2	20000	9/24/2005
trans-1,2-Dichloroethene	< 10000	10000	< 40	40		20000	9/24/2005
trans-1,3-Dichloropropene	< 10000	10000	< 46	46		20000	9/24/2005
Trichloroethene	< 10000	10000	< 55	55		20000	9/24/2005
Trichlorofluoromethane(F-11)	< 10000	10000	< 57	57		20000	9/24/2005
Trichlorotrifluoroethane(F-113)	< 10000	10000	< 78	78		20000	9/24/2005
Vinyl acetate	< 10000	10000	< 36	36		20000	9/24/2005
Vinyl chloride	< 10000	10000	< 26	26		20000	9/24/2005
Surr: 4-Bromofluorobenzene	96.0 %REC	70-130	-	-		20000	9/24/2005

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

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Aerotech Environmental

Date: *29-Sep-05*

CLIENT: City of Tucson
Work Order: 05090181
Project: 35 E. Toole

ANALYTICAL QC SUMMARY REPORT

TestCode: TO15

Sample ID: MB-R64722	SampType: MBLK	TestCode: TO15	Units: ppbv	Prep Date:	RunNo: 64722
Client ID:	Batch ID: R64722	TestNo: TO15		Analysis Date: 9/23/2005	SeqNo: 771933

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1-Trichloroethane	< 0.50	0.50									
1,1,2,2-Tetrachloroethane	< 0.50	0.50									
1,1,2-Trichloroethane	< 0.50	0.50									
1,1-Dichloroethane	< 0.50	0.50									
1,1-Dichloroethene	< 0.50	0.50									
1,2,4-Trichlorobenzene	< 1.0	1.0									
1,2,4-Trimethylbenzene	< 0.50	0.50									
1,2-Dibromoethane	< 0.50	0.50									
1,2-Dichlorobenzene	< 0.50	0.50									
1,2-Dichloroethane	< 0.50	0.50									
1,2-Dichloropropane	< 0.50	0.50									
1,3,5-Trimethylbenzene	< 0.50	0.50									
1,3-Butadiene	< 0.50	0.50									
1,3-Dichlorobenzene	< 0.50	0.50									
1,4-Dichlorobenzene	< 0.50	0.50									
2,2,4-Trimethylpentane	< 0.50	0.50									
2-Butanone (MEK)	< 1.0	1.0									
2-Hexanone	< 1.0	1.0									
2-Propanol	< 1.0	1.0									
4-Ethyltoluene	< 0.50	0.50									
4-Methyl-2-pentanone	< 1.0	1.0									
Acetone	< 5.0	5.0									
Allyl chloride	< 0.50	0.50									
Benzene	< 0.50	0.50									
Benzyl chloride	< 2.0	2.0									
Bromodichloromethane	< 0.50	0.50									
Bromoethene(Vinyl Bromide)	< 0.50	0.50									
Bromoform	< 0.50	0.50									

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

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■ Corporate Address: 1501 W. Knudsen Drive, Phoenix, Arizona 85027 Phone: 623.780.4800 Toll Free: 800.651.4802 Fax: 623.780.7695 www.aerotechlabs.com

Aerotech Environmental Laboratories

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CLIENT: City of Tucson
Work Order: 05090181
Project: 35 E. Toole

ANALYTICAL QC SUMMARY REPORT

TestCode: TO15

Sample ID: MB-R64722	SampType: MBLK	TestCode: TO15	Units: ppbv	Prep Date:	RunNo: 64722
Client ID:	Batch ID: R64722	TestNo: TO15		Analysis Date: 9/23/2005	SeqNo: 771933

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromomethane	< 0.50	0.50									
Carbon disulfide	< 0.50	0.50									
Carbon tetrachloride	< 0.50	0.50									
Chlorobenzene	< 0.50	0.50									
Chloroethane	< 0.50	0.50									
Chloroform	< 0.50	0.50									
Chloromethane	< 0.50	0.50									
cis-1,2-Dichloroethene	< 0.50	0.50									
cis-1,3-Dichloropropene	< 0.50	0.50									
Cyclohexane	< 0.50	0.50									
Dibromochloromethane	< 0.50	0.50									
Dichlorodifluoromethane(F-12)	< 0.50	0.50									
Dichlorotetrafluoroethane(F-114)	< 0.50	0.50									
Ethyl Acetate	< 0.50	0.50									
Ethylbenzene	< 0.50	0.50									
Heptane	< 0.50	0.50									
Hexachlorobutadiene	< 1.0	1.0									
Hexane	< 0.50	0.50									
m&p-Xylene	< 1.0	1.0									
Methyl tert-butyl ether	< 1.0	1.0									
Methylene chloride	< 0.50	0.50									
o-Xylene	< 0.50	0.50									
Propene (Propylene)	< 0.50	0.50									
Styrene	< 0.50	0.50									
Tetrachloroethene	< 0.50	0.50									
Tetrahydrofuran	< 2.0	2.0									
Toluene	< 0.50	0.50									
trans-1,2-Dichloroethene	< 0.50	0.50									
trans-1,3-Dichloropropene	< 0.50	0.50									

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

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■ Corporate Address: 1501 W. Knudsen Drive, Phoenix, Arizona 85027 Phone: 623.780.4800 Toll Free: 800.651.4802 Fax: 623.780.7695 www.aerotechlabs.com

Aerotech Environmental Laboratories

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CLIENT: City of Tucson
Work Order: 05090181
Project: 35 E. Toole

ANALYTICAL QC SUMMARY REPORT

TestCode: TO15

Sample ID: **MB-R64722** SampType: **MBLK** TestCode: **TO15** Units: **ppbv** Prep Date: RunNo: **64722**
Client ID: Batch ID: **R64722** TestNo: **TO15** Analysis Date: **9/23/2005** SeqNo: **771933**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Trichloroethene	< 0.50	0.50									
Trichlorofluoromethane(F-11)	< 0.50	0.50									
Trichlorotrifluoroethane(F-113)	< 0.50	0.50									
Vinyl acetate	< 0.50	0.50									
Vinyl chloride	< 0.50	0.50									
Surr: 4-Bromofluorobenzene	10.09	0.50	10	0	101	70	130				

Sample ID: **LCS-R64722** SampType: **LCS** TestCode: **TO15** Units: **ppbv** Prep Date: RunNo: **64722**
Client ID: Batch ID: **R64722** TestNo: **TO15** Analysis Date: **9/23/2005** SeqNo: **771934**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1-Trichloroethane	10.17	0.50	10	0	102	65	135				
1,1,2,2-Tetrachloroethane	10.54	0.50	10	0	105	65	135				
1,1,2-Trichloroethane	10.57	0.50	10	0	106	65	135				
1,1-Dichloroethane	10.30	0.50	10	0	103	65	135				
1,1-Dichloroethene	10.53	0.50	10	0	105	65	135				
1,2,4-Trichlorobenzene	11.67	1.0	10	0	117	65	135				
1,2,4-Trimethylbenzene	11.98	0.50	10	0	120	65	135				
1,2-Dibromoethane	10.85	0.50	10	0	108	65	135				
1,2-Dichlorobenzene	11.33	0.50	10	0	113	65	135				
1,2-Dichloroethane	10.64	0.50	10	0	106	65	135				
1,2-Dichloropropane	10.51	0.50	10	0	105	65	135				
1,3,5-Trimethylbenzene	11.72	0.50	10	0	117	65	135				
1,3-Butadiene	9.940	0.50	10	0	99.4	65	135				
1,3-Dichlorobenzene	11.03	0.50	10	0	110	65	135				
1,4-Dichlorobenzene	11.30	0.50	10	0	113	65	135				
2,2,4-Trimethylpentane	11.07	0.50	10	0	111	65	135				
2-Butanone (MEK)	10.45	1.0	10	0	104	65	135				
2-Hexanone	11.63	1.0	10	0	116	65	135				

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

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CLIENT: City of Tucson
Work Order: 05090181
Project: 35 E. Toole

ANALYTICAL QC SUMMARY REPORT

TestCode: TO15

Sample ID: LCS-R64722	SampType: LCS	TestCode: TO15	Units: ppbv	Prep Date:	RunNo: 64722
Client ID:	Batch ID: R64722	TestNo: TO15		Analysis Date: 9/23/2005	SeqNo: 771934

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2-Propanol	8.620	1.0	10	0	86.2	65	135				
4-Ethyltoluene	11.67	0.50	10	0	117	65	135				
4-Methyl-2-pentanone	11.34	1.0	10	0	113	65	135				
Acetone	9.500	5.0	10	0	95.0	65	135				
Allyl chloride	10.85	0.50	10	0	108	65	135				
Benzene	10.68	0.50	10	0	107	65	135				
Benzyl chloride	11.12	2.0	10	0	111	65	135				
Bromodichloromethane	11.00	0.50	10	0	110	65	135				
Bromoethene(Vinyl Bromide)	10.19	0.50	10	0	102	65	135				
Bromoform	10.63	0.50	10	0	106	65	135				
Bromomethane	10.14	0.50	10	0	101	65	135				
Carbon disulfide	9.880	0.50	10	0	98.8	65	135				
Carbon tetrachloride	10.71	0.50	10	0	107	65	135				
Chlorobenzene	10.28	0.50	10	0	103	65	135				
Chloroethane	9.850	0.50	10	0	98.5	65	135				
Chloroform	10.08	0.50	10	0	101	65	135				
Chloromethane	9.770	0.50	10	0	97.7	65	135				
cis-1,2-Dichloroethene	10.83	0.50	10	0	108	65	135				
cis-1,3-Dichloropropene	12.15	0.50	10	0	122	65	135				
Cyclohexane	11.50	0.50	10	0	115	65	135				
Dibromochloromethane	10.67	0.50	10	0	107	65	135				
Dichlorodifluoromethane(F-12)	9.660	0.50	10	0	96.6	65	135				
Dichlorotetrafluoroethane(F-114)	10.03	0.50	10	0	100	65	135				
Ethyl Acetate	10.71	0.50	10	0	107	65	135				
Ethylbenzene	11.46	0.50	10	0	115	65	135				
Heptane	11.20	0.50	10	0	112	65	135				
Hexachlorobutadiene	10.97	1.0	10	0	110	65	135				
Hexane	11.99	0.50	10	0	120	65	135				
m&p-Xylene	22.36	1.0	20	0	112	65	135				

Qualifiers:
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- H Holding times for preparation or analysis exceeded
- R RPD outside accepted recovery limits
- J Analyte detected below quantitation limits
- S Spike Recovery outside accepted recovery limits

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CLIENT: City of Tucson
Work Order: 05090181
Project: 35 E. Toole

ANALYTICAL QC SUMMARY REPORT

TestCode: TO15

Sample ID: **LCS-R64722** SampType: **LCS** TestCode: **TO15** Units: **ppbv** Prep Date: RunNo: **64722**
Client ID: Batch ID: **R64722** TestNo: **TO15** Analysis Date: **9/23/2005** SeqNo: **771934**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methyl tert-butyl ether	10.38	1.0	10	0	104	65	135				
Methylene chloride	9.600	0.50	10	0	96.0	65	135				
o-Xylene	11.36	0.50	10	0	114	65	135				
Propene (Propylene)	9.600	0.50	10	0	96.0	65	135				
Styrene	11.74	0.50	10	0	117	65	135				
Tetrachloroethene	11.15	0.50	10	0	112	65	135				
Tetrahydrofuran	11.29	2.0	10	0	113	65	135				
Toluene	11.90	0.50	10	0	119	65	135				
trans-1,2-Dichloroethene	10.31	0.50	10	0	103	65	135				
trans-1,3-Dichloropropene	11.50	0.50	10	0	115	65	135				
Trichloroethene	10.97	0.50	10	0	110	65	135				
Trichlorofluoromethane(F-11)	10.54	0.50	10	0	105	65	135				
Trichlorotrifluoroethane(F-113)	10.32	0.50	10	0	103	65	135				
Vinyl acetate	10.99	0.50	10	0	110	65	135				
Vinyl chloride	9.720	0.50	10	0	97.2	65	135				
Surr: 4-Bromofluorobenzene	10.54	0.50	10	0	105	70	130				

Sample ID: **LCSD-R64722** SampType: **LCSD** TestCode: **TO15** Units: **ppbv** Prep Date: RunNo: **64722**
Client ID: Batch ID: **R64722** TestNo: **TO15** Analysis Date: **9/23/2005** SeqNo: **771935**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1-Trichloroethane	10.30	0.50	10	0	103	65	135	10.17	1.27	25	
1,1,2,2-Tetrachloroethane	10.53	0.50	10	0	105	65	135	10.54	0.0949	25	
1,1,2-Trichloroethane	10.50	0.50	10	0	105	65	135	10.57	0.664	25	
1,1-Dichloroethane	10.53	0.50	10	0	105	65	135	10.30	2.21	25	
1,1-Dichloroethene	10.94	0.50	10	0	109	65	135	10.53	3.82	25	
1,2,4-Trichlorobenzene	11.71	1.0	10	0	117	65	135	11.67	0.342	25	
1,2,4-Trimethylbenzene	11.91	0.50	10	0	119	65	135	11.98	0.586	25	
1,2-Dibromoethane	10.84	0.50	10	0	108	65	135	10.85	0.0922	25	

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

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CLIENT: City of Tucson
Work Order: 05090181
Project: 35 E. Toole

ANALYTICAL QC SUMMARY REPORT

TestCode: TO15

Sample ID: **LCSD-R64722** SampType: **LCSD** TestCode: **TO15** Units: **ppbv** Prep Date: RunNo: **64722**
Client ID: Batch ID: **R64722** TestNo: **TO15** Analysis Date: **9/23/2005** SeqNo: **771935**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2-Dichlorobenzene	11.18	0.50	10	0	112	65	135	11.33	1.33	25	
1,2-Dichloroethane	10.77	0.50	10	0	108	65	135	10.64	1.21	25	
1,2-Dichloropropane	10.52	0.50	10	0	105	65	135	10.51	0.0951	25	
1,3,5-Trimethylbenzene	11.62	0.50	10	0	116	65	135	11.72	0.857	25	
1,3-Butadiene	10.49	0.50	10	0	105	65	135	9.940	5.38	25	
1,3-Dichlorobenzene	11.01	0.50	10	0	110	65	135	11.03	0.181	25	
1,4-Dichlorobenzene	11.25	0.50	10	0	112	65	135	11.30	0.443	25	
2,2,4-Trimethylpentane	11.06	0.50	10	0	111	65	135	11.07	0.0904	25	
2-Butanone (MEK)	10.94	1.0	10	0	109	65	135	10.45	4.58	25	
2-Hexanone	11.49	1.0	10	0	115	65	135	11.63	1.21	25	
2-Propanol	9.160	1.0	10	0	91.6	65	135	8.620	6.07	25	
4-Ethyltoluene	11.66	0.50	10	0	117	65	135	11.67	0.0857	25	
4-Methyl-2-pentanone	11.13	1.0	10	0	111	65	135	11.34	1.87	25	
Acetone	9.730	5.0	10	0	97.3	65	135	9.500	2.39	25	
Allyl chloride	11.32	0.50	10	0	113	65	135	10.85	4.24	25	
Benzene	11.00	0.50	10	0	110	65	135	10.68	2.95	25	
Benzyl chloride	11.20	2.0	10	0	112	65	135	11.12	0.717	25	
Bromodichloromethane	10.84	0.50	10	0	108	65	135	11.00	1.47	25	
Bromoethene(Vinyl Bromide)	10.63	0.50	10	0	106	65	135	10.19	4.23	25	
Bromoform	10.48	0.50	10	0	105	65	135	10.63	1.42	25	
Bromomethane	10.64	0.50	10	0	106	65	135	10.14	4.81	25	
Carbon disulfide	10.38	0.50	10	0	104	65	135	9.880	4.94	25	
Carbon tetrachloride	10.71	0.50	10	0	107	65	135	10.71	0	25	
Chlorobenzene	10.33	0.50	10	0	103	65	135	10.28	0.485	25	
Chloroethane	10.33	0.50	10	0	103	65	135	9.850	4.76	25	
Chloroform	10.19	0.50	10	0	102	65	135	10.08	1.09	25	
Chloromethane	10.41	0.50	10	0	104	65	135	9.770	6.34	25	
cis-1,2-Dichloroethene	11.17	0.50	10	0	112	65	135	10.83	3.09	25	
cis-1,3-Dichloropropene	12.04	0.50	10	0	120	65	135	12.15	0.909	25	

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

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CLIENT: City of Tucson
Work Order: 05090181
Project: 35 E. Toole

ANALYTICAL QC SUMMARY REPORT

TestCode: TO15

Sample ID: **LCSD-R64722** SampType: **LCSD** TestCode: **TO15** Units: **ppbv** Prep Date: RunNo: **64722**
Client ID: Batch ID: **R64722** TestNo: **TO15** Analysis Date: **9/23/2005** SeqNo: **771935**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cyclohexane	11.76	0.50	10	0	118	65	135	11.50	2.24	25	
Dibromochloromethane	10.52	0.50	10	0	105	65	135	10.67	1.42	25	
Dichlorodifluoromethane(F-12)	10.13	0.50	10	0	101	65	135	9.660	4.75	25	
Dichlorotetrafluoroethane(F-114)	10.58	0.50	10	0	106	65	135	10.03	5.34	25	
Ethyl Acetate	10.97	0.50	10	0	110	65	135	10.71	2.40	25	
Ethylbenzene	11.61	0.50	10	0	116	65	135	11.46	1.30	25	
Heptane	11.13	0.50	10	0	111	65	135	11.20	0.627	25	
Hexachlorobutadiene	10.77	1.0	10	0	108	65	135	10.97	1.84	25	
Hexane	12.27	0.50	10	0	123	65	135	11.99	2.31	25	
m&p-Xylene	23.03	1.0	20	0	115	65	135	22.36	2.95	25	
Methyl tert-butyl ether	10.93	1.0	10	0	109	65	135	10.38	5.16	25	
Methylene chloride	9.800	0.50	10	0	98.0	65	135	9.600	2.06	25	
o-Xylene	11.24	0.50	10	0	112	65	135	11.36	1.06	25	
Propene (Propylene)	10.64	0.50	10	0	106	65	135	9.600	10.3	25	
Styrene	11.75	0.50	10	0	118	65	135	11.74	0.0851	25	
Tetrachloroethene	11.02	0.50	10	0	110	65	135	11.15	1.17	25	
Tetrahydrofuran	11.44	2.0	10	0	114	65	135	11.29	1.32	25	
Toluene	11.84	0.50	10	0	118	65	135	11.90	0.505	25	
trans-1,2-Dichloroethene	10.82	0.50	10	0	108	65	135	10.31	4.83	25	
trans-1,3-Dichloropropene	11.50	0.50	10	0	115	65	135	11.50	0	25	
Trichloroethene	10.89	0.50	10	0	109	65	135	10.97	0.732	25	
Trichlorofluoromethane(F-11)	10.77	0.50	10	0	108	65	135	10.54	2.16	25	
Trichlorotrifluoroethane(F-113)	10.58	0.50	10	0	106	65	135	10.32	2.49	25	
Vinyl acetate	11.44	0.50	10	0	114	65	135	10.99	4.01	25	
Vinyl chloride	10.56	0.50	10	0	106	65	135	9.720	8.28	25	
Surr: 4-Bromofluorobenzene	10.36	0.50	10	0	104	70	130	10.54	0	0	

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

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www.aeroenvirolabs.com or call toll-free 866.772.5227

Lab Number: 05-09-0181

Customer Number:
Customer: CITY OF TUCSON - ES
Address: 100 N. STONE ST 2ND FLOOR
City, State, Zip: TUCSON AZ 85701
Contact: MOLLY COLLINS
Phone: 520 791 5414 Fax: 520 791 5414
E-Mail Address: MOLLY.COLLINS@TUCSONAZ.GOV

Page ___ of ___
Sampler: MOLLY COLLINS
Project Name: 38 E TOOLE
Project Number:
P.O. Number:
Fax Results: (Y) N
E-Mail Results: (Y) N

Sample Receipt
Temperature_____ °C
Custody Seals: Yes_____ No_____
Custody Seals Intact: Yes_____ No_____
Total # of Containers:_____

Turn Around Request
___ 24 Hours ___ 48 Hours
___ 72 Hours
___ 5 working Day
X Standard 10 Working Days
Subject to scheduling and availability (surcharges apply)

Analyses Requested

Sample Information

Lab #	Canister Serial #	Model	Sample Identification	Date	Time	Type	Final	Receipt	TO-14 List of TO-15	TO-15 list	PCE Only by TO-15							
	00323	6, (1) 0.4	TOOLE-EFF-092205	9/22/05	0915					X								
	00616	6, (1) 0.4	TOOLE-INF-092205	9/22/05	0920					X								
		6, 1, 0.4																
		6, 1, 0.4																
		6, 1, 0.4																
		6, 1, 0.4																
		6, 1, 0.4																
		6, 1, 0.4																
		6, 1, 0.4																
		6, 1, 0.4																

Instructions / Special Requirements:

Date:	Time:	Samples Relinquished By:	Received By:
9/22/05	0925	[signature]	[signature]
9/22/05	12:30	[signature]	[signature] 9-22-05 9:26

Analysis performed is subject to the Terms & Conditions available at www.aeroenvirolabs.com or call 866.772.5227 to request a copy.

Aerotech Environmental Laboratories Sample Receipt Checklist Project checked by:_____

Laboratory Number: 05-09-0181	Checklist completed by: J Spanow
Client Name: City of Tucson	Signature/Date 9/22/05
Matrix: Air / Carrier Name: Yuma	Date/Time Rec'd: 9/22/05 12:30 By: JS

Temperature of Samples? Ambient *Circle one:* Blue Ice Wet Ice Not Present

	Yes	No*	Not Present
Shipping container/cooler in good condition?			✓
Custody seals intact on shipping container/cooler?			✓
Custody seals intact on sample containers?			✓
Chain of Custody present and relinquished/received properly?	✓		
Chain of Custody agrees with sample labels?	✓		
Samples in proper containers/bottles?	✓		
Sample containers intact?	✓		
All samples received within holding time?	✓		**See Comment about Chlorine and pH
Is there sufficient sample volume to perform the tests?	✓		
40mL vials for volatiles & SOCs received with zero headspace?			✓

Soil Containers:
Brass Sleeve____
Glass Jar____
Methanol____
Plastic Bag____
Encore Samplers____

Total number of bottles received: 2 IH sample media: 1 Ltr Summa canister

If applicable, how many sample bottles were shipped from AEL-Tucson? N/A ✓

Number of containers received by preservative and by sample number: (If more than 15 samples are rec'd, please continue on separate sheet(s))

Preservative	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
A-General	1	1													
B-HNO3															
C-H2SO4															
D-HCl															
E-Na2S2O3															
F-NaOH															
G-Sulfide															
H-Na Sulfite															
I-MCAA															
J-Methanol															
K-HAA															
L-Other															

Water-pH acceptable upon receipt? Yes No N/A ✓

Preservative & pH	pH of samples upon receipt	If pH requires adjustment, list sample number, and reagent ID. number
Metals <2		
Nutrients <2		
Total Phenols <2		
413 (O&G) <2		
418 (TPH) <2		
Cyanide >12		
Sulfide >9		

Any No response must be detailed in the comments section below. Contact the PM immediately to determine how to proceed. Refer to SOP 11-001.04, Section 1.8.6. Continue on back if additional space is needed.

*****The holding time for pH and Total Residual Chlorine analysis is immediate. For the most accurate result, the pH and Total Residual Chlorine should be taken in the field within 15 minutes of sampling.***

Comments:

Corrective Action:

Aerotech Environmental Laboratories

a division of Aerotech Laboratories, Inc.

Friday, September 23, 2005

RECEIVED

SEP 28 2005

ENVIRONMENTAL SERVICES
100 N. STONE AVE., 2ND FLOOR

Molly Collins
City of Tucson, Environmental Services
100 N. Stone Ave., 2nd Floor
Tucson, AZ 85710

TEL: (520) 791-5414
FAX (520) 791-5417

RE: Toole-SVE

Order No.: 05090073

Dear Molly Collins:

Aerotech Environmental received 3 sample(s) on 9/8/2005 for the analyses presented in the following report.

This report includes the following information:
- Case Narrative.
- Analytical Report: includes test results, report limit (Limit), any applicable data qualifier (Qual), units, dilution factor (DF), and date analyzed.
- QC Summary Report.

This communication is intended only for the individual or entity to whom it is directed. It may contain information that is privileged, confidential, or otherwise exempt from disclosure under applicable law. Dissemination, distribution, or copying of this communication by anyone other than the intended recipient, or a duly designated employee or agent of such recipient, is prohibited. If you have received this communication in error, please notify us immediately and destroy this message and all attachments thereto. If you have any questions regarding these test results, please do not hesitate to call.

Sincerely,

Korky Vault
Service Center Manager

Aerotech Environmental **Date:** *23-Sep-05*

CLIENT: City of Tucson, Environmental Services
Project: Toole-SVE
Lab Order: 05090073

CASE NARRATIVE

Samples were analyzed using methods outlined in references such as:

Standard Methods for the Examination of Water and Wastewater, 19th Edition, 1995.

Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Revised March 1983.

Methods for the Determination of Organic Compounds in Drinking Water: Supplement III, EPA/600/R-95/131, August 1995.

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition.

40 CFR, Part 136, Revised 1998. Appendix A to Part 136 - Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater.

NIOSH Manual of Analytical Methods, Fourth Edition, 1994.

Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, Second Edition, 1999.

Aerotech Environmental Laboratories (AEL) holds Arizona certification no. AZ0610 and AEL-Tucson holds Arizona certification no. AZ0609.

Aerotech Environmental Laboratories (Laboratory ID 154268) is accredited by the American Industrial Hygiene Association (AIHA) in the industrial hygiene program for the analytical techniques noted on the scope of accreditation.

Analytical Comments:

All method blanks and laboratory control spikes met EPA method and/or laboratory quality control objectives for the analyses included in this report.

Main Laboratory: 4645 E. Cotton Center Boulevard, Building 3, Suite 189 Phoenix, AZ 85040 Phone: 602.437.3340 Toll Free: 866.772.5227 Fax. 623.445.6192 www.aeroenvirolabs.com
Tucson Facility: 4455 S. Park Ave. Ste. 110 Tucson, AZ 85714 Phone: 520.807.3801 Fax: 520.807.3803
Corporate Address: 1501 W. Knudsen Drive, Phoenix, Arizona 85027

Aerotech Environmental Laboratories

a division of Aerotech Laboratories, Inc.

Aerotech Environmental

Date: *26-Sep-05*

CLIENT: City of Tucson, Environmental Services
Project: Toole-SVE
Lab Order: 05090073

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Tag Number	Collection Date	Date Received
05090073-01A	TOOLE-INF-090805	Tube	9/8/2005 11:10:00 AM	9/8/2005
05090073-01B	TOOLE-INF-090805	Filter	9/8/2005 11:10:00 AM	9/8/2005
05090073-02A	TOOLE-EFF-090805	Tube	9/8/2005 11:22:00 AM	9/8/2005
05090073-02B	TOOLE-EFF-090805	Filter	9/8/2005 11:22:00 AM	9/8/2005
05090073-03A	TOOLE-P3-090805	Tube	9/8/2005 11:40:00 AM	9/8/2005
05090073-03B	TOOLE-P3-090805	Filter	9/8/2005 11:40:00 AM	9/8/2005

Main Laboratory: 4645 E. Cotton Center Boulevard, Building 3, Suite 189 Phoenix, AZ 85040 Phone: 602.437.3340 Toll Free: 866.772.5227 Fax. 623.445.6192 www.aeroenvirolabs.com
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Analytical Results
for
City of Tucson, Environmental Services
WorkOrder: 05090073
Client Reference: Toole-SVE

Sample Identification: TOOLE-INF-090805
Lab Number: -01A
Sample Type:

Date Sampled: 9/8/2005
Date Received: 9/8/2005
Air Volume (L): NA

Analyte		Concentration (µg, Total)	Concentration (mg/m³)	Concentration (ppm)	Limit of Detection (µg, Total)	Qual	Test Method	Date Analyzed /Analyst	
Acenaphthene		<2.00	--	--	2.00		NIOSH 5506 (Mo	09/15/2005	S S
Acenaphthylene		<2.50	--	--	2.50		NIOSH 5506 (Mo	09/15/2005	S S
Anthracene		<0.250	--	--	0.250		NIOSH 5506 (Mo	09/15/2005	S S
Benz(a)anthracene		<0.250	--	--	0.250		NIOSH 5506 (Mo	09/15/2005	S S
Benzo(a)pyrene		<0.250	--	--	0.250		NIOSH 5506 (Mo	09/15/2005	S S
Benzo(b)fluoranthene		<0.500	--	--	0.500		NIOSH 5506 (Mo	09/15/2005	S S
Benzo(g,h,i)perylene		<0.500	--	--	0.500		NIOSH 5506 (Mo	09/15/2005	S S
Benzo(k)fluoranthene		<0.250	--	--	0.250		NIOSH 5506 (Mo	09/15/2005	S S
Chrysene		<0.250	--	--	0.250		NIOSH 5506 (Mo	09/15/2005	S S
Dibenz(a,h)anthracene		<0.500	--	--	0.500		NIOSH 5506 (Mo	09/17/2005	S S
Fluoranthene		<0.500	--	--	0.500		NIOSH 5506 (Mo	09/15/2005	S S
Fluorene		<0.500	--	--	0.500		NIOSH 5506 (Mo	09/15/2005	S S
Indeno(1,2,3-cd)pyrene		<0.250	--	--	0.250		NIOSH 5506 (Mo	09/15/2005	S S
Naphthalene	Total	26.1	--	--	1.00		NIOSH 5506 (Mo	09/15/2005	S S
	Front	19.5345							
	Back	6.58405 (a)							
Phenanthrene		<0.250	--	--	0.250		NIOSH 5506 (Mo	09/15/2005	S S
Pyrene		<0.250	--	--	0.250		NIOSH 5506 (Mo	09/15/2005	S S

General Notes:
<: Less than the indicated limit of detection (LOD).
--: Information not available or not applicable.
Back sections were checked and showed no significant breakthrough.

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Aerotech Environmental Laboratories

a division of Aerotech Laboratories, Inc.

Analytical Results
for
City of Tucson, Environmental Services
WorkOrder: 05090073
Client Reference: Toole-SVE

Sample Identification: TOOLE-INF-090805
Lab Number: -01B
Sample Type:

Date Sampled: 9/8/2005
Date Received: 9/8/2005
Air Volume (L): NA

Analyte	Concentration (µg, Total)	Concentration (mg/m³)	Concentration (ppm)	Limit of Detection (µg, Total)	Qual	Test Method	Date Analyzed /Analyst	
Acenaphthene	<2.00	--	--	2.00		NIOSH 5506 (Mo	09/15/2005	S S
Acenaphthylene	<2.50	--	--	2.50		NIOSH 5506 (Mo	09/15/2005	S S
Anthracene	<0.250	--	--	0.250		NIOSH 5506 (Mo	09/15/2005	S S
Benz(a)anthracene	<0.250	--	--	0.250		NIOSH 5506 (Mo	09/15/2005	S S
Benzo(a)pyrene	<0.250	--	--	0.250		NIOSH 5506 (Mo	09/15/2005	S S
Benzo(b)fluoranthene	<0.500	--	--	0.500		NIOSH 5506 (Mo	09/15/2005	S S
Benzo(g,h,i)perylene	<0.500	--	--	0.500		NIOSH 5506 (Mo	09/15/2005	S S
Benzo(k)fluoranthene	<0.250	--	--	0.250		NIOSH 5506 (Mo	09/15/2005	S S
Chrysene	<0.250	--	--	0.250		NIOSH 5506 (Mo	09/15/2005	S S
Dibenz(a,h)anthracene	<0.500	--	--	0.500		NIOSH 5506 (Mo	09/16/2005	S S
Fluoranthene	<0.500	--	--	0.500		NIOSH 5506 (Mo	09/15/2005	S S
Fluorene	<0.500	--	--	0.500		NIOSH 5506 (Mo	09/15/2005	S S
Indeno(1,2,3-cd)pyrene	<0.250	--	--	0.250		NIOSH 5506 (Mo	09/15/2005	S S
Naphthalene	<1.00	--	--	1.00		NIOSH 5506 (Mo	09/15/2005	S S
Phenanthrene	<0.250	--	--	0.250		NIOSH 5506 (Mo	09/15/2005	S S
Pyrene	<0.250	--	--	0.250		NIOSH 5506 (Mo	09/15/2005	S S

General Notes:
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--: Information not available or not applicable.
Back sections were checked and showed no significant breakthrough.

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Analytical Results
for
City of Tucson, Environmental Services
WorkOrder: 05090073
Client Reference: Toole-SVE

Sample Identification: TOOLE-EFF-090805
Lab Number: -02A
Sample Type:

Date Sampled: 9/8/2005
Date Received: 9/8/2005
Air Volume (L): NA

Analyte	Concentration (µg, Total)	Concentration (mg/m³)	Concentration (ppm)	Limit of Detection (µg, Total)	Qual	Test Method	Date Analyzed /Analyst	
Acenaphthene	<2.00	--	--	2.00		NIOSH 5506 (Mo	09/15/2005	S S
Acenaphthylene	<2.50	--	--	2.50		NIOSH 5506 (Mo	09/15/2005	S S
Anthracene	<0.250	--	--	0.250		NIOSH 5506 (Mo	09/15/2005	S S
Benz(a)anthracene	<0.250	--	--	0.250		NIOSH 5506 (Mo	09/15/2005	S S
Benzo(a)pyrene	<0.250	--	--	0.250		NIOSH 5506 (Mo	09/15/2005	S S
Benzo(b)fluoranthene	<0.500	--	--	0.500		NIOSH 5506 (Mo	09/15/2005	S S
Benzo(g,h,i)perylene	<0.500	--	--	0.500		NIOSH 5506 (Mo	09/15/2005	S S
Benzo(k)fluoranthene	<0.250	--	--	0.250		NIOSH 5506 (Mo	09/15/2005	S S
Chrysene	<0.250	--	--	0.250		NIOSH 5506 (Mo	09/15/2005	S S
Dibenz(a,h)anthracene	<0.500	--	--	0.500		NIOSH 5506 (Mo	09/17/2005	S S
Fluoranthene	<0.500	--	--	0.500		NIOSH 5506 (Mo	09/15/2005	S S
Fluorene	<0.500	--	--	0.500		NIOSH 5506 (Mo	09/15/2005	S S
Indeno(1,2,3-cd)pyrene	<0.250	--	--	0.250		NIOSH 5506 (Mo	09/15/2005	S S
Naphthalene	<1.00	--	--	1.00		NIOSH 5506 (Mo	09/15/2005	S S
Phenanthrene	<0.250	--	--	0.250		NIOSH 5506 (Mo	09/15/2005	S S
Pyrene	<0.250	--	--	0.250		NIOSH 5506 (Mo	09/15/2005	S S

General Notes:
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--: Information not available or not applicable.
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■ Corporate Address: 1501 W. Knudsen Drive, Phoenix, Arizona 85027 Phone: 623.780.4800 Toll Free: 800.651.4802 Fax: 623.780.7695 www.aerotechlabs.com

Aerotech Environmental Laboratories

a division of Aerotech Laboratories, Inc.

Analytical Results
for
City of Tucson, Environmental Services
WorkOrder: 05090073
Client Reference: Toole-SVE

Sample Identification: TOOLE-EFF-090805
Lab Number: -02B
Sample Type:

Date Sampled: 9/8/2005
Date Received: 9/8/2005
Air Volume (L): NA

Analyte	Concentration (µg, Total)	Concentration (mg/m³)	Concentration (ppm)	Limit of Detection (µg, Total)	Qual	Test Method	Date Analyzed /Analyst	
Acenaphthene	<2.00	--	--	2.00		NIOSH 5506 (Mo	09/15/2005	S S
Acenaphthylene	<2.50	--	--	2.50		NIOSH 5506 (Mo	09/15/2005	S S
Anthracene	<0.250	--	--	0.250		NIOSH 5506 (Mo	09/15/2005	S S
Benz(a)anthracene	<0.250	--	--	0.250		NIOSH 5506 (Mo	09/15/2005	S S
Benzo(a)pyrene	<0.250	--	--	0.250		NIOSH 5506 (Mo	09/15/2005	S S
Benzo(b)fluoranthene	<0.500	--	--	0.500		NIOSH 5506 (Mo	09/15/2005	S S
Benzo(g,h,i)perylene	<0.500	--	--	0.500		NIOSH 5506 (Mo	09/15/2005	S S
Benzo(k)fluoranthene	<0.250	--	--	0.250		NIOSH 5506 (Mo	09/15/2005	S S
Chrysene	<0.250	--	--	0.250		NIOSH 5506 (Mo	09/15/2005	S S
Dibenz(a,h)anthracene	<0.500	--	--	0.500		NIOSH 5506 (Mo	09/16/2005	S S
Fluoranthene	<0.500	--	--	0.500		NIOSH 5506 (Mo	09/15/2005	S S
Fluorene	<0.500	--	--	0.500		NIOSH 5506 (Mo	09/15/2005	S S
Indeno(1,2,3-cd)pyrene	<0.250	--	--	0.250		NIOSH 5506 (Mo	09/15/2005	S S
Naphthalene	<1.00	--	--	1.00		NIOSH 5506 (Mo	09/15/2005	S S
Phenanthrene	<0.250	--	--	0.250		NIOSH 5506 (Mo	09/15/2005	S S
Pyrene	<0.250	--	--	0.250		NIOSH 5506 (Mo	09/15/2005	S S

General Notes:
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--: Information not available or not applicable.
Back sections were checked and showed no significant breakthrough.

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Aerotech Environmental Laboratories

a division of Aerotech Laboratories, Inc.

Analytical Results
for
City of Tucson, Environmental Services
WorkOrder: 05090073
Client Reference: Toole-SVE

Sample Identification: TOOLE-P3-090805
Lab Number: -03A
Sample Type:

Date Sampled: 9/8/2005
Date Received: 9/8/2005
Air Volume (L): NA

Analyte		Concentration (µg, Total)	Concentration (mg/m³)	Concentration (ppm)	Limit of Detection (µg, Total)	Qual	Test Method	Date Analyzed /Analyst	
Acenaphthene		<2.00	--	--	2.00		NIOSH 5506 (Mo	09/15/2005	S S
Acenaphthylene		<2.50	--	--	2.50		NIOSH 5506 (Mo	09/15/2005	S S
Anthracene		<0.250	--	--	0.250		NIOSH 5506 (Mo	09/15/2005	S S
Benz(a)anthracene		<0.250	--	--	0.250		NIOSH 5506 (Mo	09/15/2005	S S
Benzo(a)pyrene		<0.250	--	--	0.250		NIOSH 5506 (Mo	09/15/2005	S S
Benzo(b)fluoranthene		<0.500	--	--	0.500		NIOSH 5506 (Mo	09/15/2005	S S
Benzo(g,h,i)perylene		<0.500	--	--	0.500		NIOSH 5506 (Mo	09/15/2005	S S
Benzo(k)fluoranthene		<0.250	--	--	0.250		NIOSH 5506 (Mo	09/15/2005	S S
Chrysene		<0.250	--	--	0.250		NIOSH 5506 (Mo	09/15/2005	S S
Dibenz(a,h)anthracene		<0.500	--	--	0.500		NIOSH 5506 (Mo	09/17/2005	S S
Fluoranthene		<0.500	--	--	0.500		NIOSH 5506 (Mo	09/15/2005	S S
Fluorene		0.503	--	--	0.500		NIOSH 5506 (Mo	09/15/2005	S S
Indeno(1,2,3-cd)pyrene		<0.250	--	--	0.250		NIOSH 5506 (Mo	09/15/2005	S S
Naphthalene	Total	102	--	--	1.00		NIOSH 5506 (Mo	09/15/2005	S S
	Front	70.19895							
	Back	32.1299 (a)							
Phenanthrene		<0.250	--	--	0.250		NIOSH 5506 (Mo	09/15/2005	S S
Pyrene		<0.250	--	--	0.250		NIOSH 5506 (Mo	09/15/2005	S S

General Notes:
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Analytical Results
for
City of Tucson, Environmental Services
WorkOrder: 05090073
Client Reference: Toole-SVE

Sample Identification: TOOLE-P3-090805
Lab Number: -03B
Sample Type:

Date Sampled: 9/8/2005
Date Received: 9/8/2005
Air Volume (L): NA

Analyte	Concentration (µg, Total)	Concentration (mg/m³)	Concentration (ppm)	Limit of Detection (µg, Total)	Qual	Test Method	Date Analyzed /Analyst	
Acenaphthene	<2.00	--	--	2.00		NIOSH 5506 (Mo	09/15/2005	S S
Acenaphthylene	<2.50	--	--	2.50		NIOSH 5506 (Mo	09/15/2005	S S
Anthracene	<0.250	--	--	0.250		NIOSH 5506 (Mo	09/15/2005	S S
Benz(a)anthracene	<0.250	--	--	0.250		NIOSH 5506 (Mo	09/15/2005	S S
Benzo(a)pyrene	<0.250	--	--	0.250		NIOSH 5506 (Mo	09/15/2005	S S
Benzo(b)fluoranthene	<0.500	--	--	0.500		NIOSH 5506 (Mo	09/15/2005	S S
Benzo(g,h,i)perylene	<0.500	--	--	0.500		NIOSH 5506 (Mo	09/15/2005	S S
Benzo(k)fluoranthene	<0.250	--	--	0.250		NIOSH 5506 (Mo	09/15/2005	S S
Chrysene	<0.250	--	--	0.250		NIOSH 5506 (Mo	09/15/2005	S S
Dibenz(a,h)anthracene	<0.500	--	--	0.500		NIOSH 5506 (Mo	09/16/2005	S S
Fluoranthene	<0.500	--	--	0.500		NIOSH 5506 (Mo	09/15/2005	S S
Fluorene	<0.500	--	--	0.500		NIOSH 5506 (Mo	09/15/2005	S S
Indeno(1,2,3-cd)pyrene	<0.250	--	--	0.250		NIOSH 5506 (Mo	09/15/2005	S S
Naphthalene	<1.00	--	--	1.00		NIOSH 5506 (Mo	09/15/2005	S S
Phenanthrene	<0.250	--	--	0.250		NIOSH 5506 (Mo	09/15/2005	S S
Pyrene	<0.250	--	--	0.250		NIOSH 5506 (Mo	09/15/2005	S S

General Notes:
<: Less than the indicated limit of detection (LOD).
--: Information not available or not applicable.
Back sections were checked and showed no significant breakthrough.

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Aerotech Environmental Laboratories

a division of Aerotech Laboratories, Inc.

Aerotech Environmental

Date: *23-Sep-05*

CLIENT: City of Tucson, Environmental Services
Work Order: 05090073
Project: Toole-SVE

ANALYTICAL QC SUMMARY REPORT

TestCode: A_N5506_IH

Sample ID: **MB-R64361** SampType: **MBLK** TestCode: **A_N5506_IH** Units: **µg, Total** Prep Date: RunNo: **64361**
Client ID: Batch ID: **R64361** TestNo: **N5506** Analysis Date: **9/15/2005** SeqNo: **767256**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthene	< 2.00	2.00									
Acenaphthylene	< 2.50	2.50									
Anthracene	< 0.250	0.250									
Benz(a)anthracene	< 0.250	0.250									
Benzo(a)pyrene	< 0.250	0.250									
Benzo(b)fluoranthene	< 0.500	0.500									
Benzo(g,h,i)perylene	< 0.500	0.500									
Benzo(k)fluoranthene	< 0.250	0.250									
Chrysene	< 0.250	0.250									
Fluoranthene	< 0.500	0.500									
Fluorene	< 0.500	0.500									
Indeno(1,2,3-cd)pyrene	< 0.250	0.250									
Naphthalene	< 1.00	1.00									
Phenanthrene	< 0.250	0.250									
Pyrene	< 0.250	0.250									

Sample ID: **MB-R64361** SampType: **MBLK** TestCode: **A_N5506_IH** Units: **µg, Total** Prep Date: RunNo: **64361**
Client ID: Batch ID: **R64361** TestNo: **N5506** Analysis Date: **9/15/2005** SeqNo: **767285**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthene	< 2.00	2.00									
Acenaphthylene	< 2.50	2.50									
Anthracene	< 0.250	0.250									
Benz(a)anthracene	< 0.250	0.250									
Benzo(a)pyrene	< 0.250	0.250									
Benzo(b)fluoranthene	< 0.500	0.500									
Benzo(g,h,i)perylene	< 0.500	0.500									

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

■ Main Laboratory: 4645 E. Cotton Center Boulevard, Building 3, Suite 189 Phoenix, AZ 85040 Phone: 602.437.3340 Toll Free: 866.772.5227 Fax. 623.445.6192 www.aeroenvirolabs.com
■ Tucson Facility: 4455 S. Park Ave. Ste. 110 Tucson, AZ 85714 Phone: 520.807.3801 Fax: 520.807.3803
■ Corporate Address: 1501 W. Knudsen Drive, Phoenix, Arizona 85027 Phone: 623.780.4800 Toll Free: 800.651.4802 Fax: 623.780.7695 www.aerotechlabs.com

Aerotech Environmental Laboratories

a division of Aerotech Laboratories, Inc.

CLIENT: City of Tucson, Environmental Services
Work Order: 05090073
Project: Toole-SVE

ANALYTICAL QC SUMMARY REPORT

TestCode: A_N5506_IH

Sample ID: **MB-R64361** SampType: **MBLK** TestCode: **A_N5506_IH** Units: **µg, Total** Prep Date: RunNo: **64361**
Client ID: Batch ID: **R64361** TestNo: **N5506** Analysis Date: **9/15/2005** SeqNo: **767285**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(k)fluoranthene	< 0.250	0.250									
Chrysene	< 0.250	0.250									
Fluoranthene	< 0.500	0.500									
Fluorene	< 0.500	0.500									
Indeno(1,2,3-cd)pyrene	< 0.250	0.250									
Naphthalene	< 1.00	1.00									
Phenanthrene	< 0.250	0.250									
Pyrene	< 0.250	0.250									

Sample ID: **MB-R64391** SampType: **MBLK** TestCode: **A_N5506_IH** Units: **µg, Total** Prep Date: RunNo: **64391**
Client ID: Batch ID: **R64391** TestNo: **N5506** Analysis Date: **9/16/2005** SeqNo: **767645**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dibenz(a,h)anthracene	< 0.500	0.500									

Sample ID: **MB-R64391** SampType: **MBLK** TestCode: **A_N5506_IH** Units: **µg, Total** Prep Date: RunNo: **64391**
Client ID: Batch ID: **R64391** TestNo: **N5506** Analysis Date: **9/16/2005** SeqNo: **767659**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dibenz(a,h)anthracene	< 0.500	0.500									

Sample ID: **LCS-R64361** SampType: **LCS** TestCode: **A_N5506_IH** Units: **µg, Total** Prep Date: RunNo: **64361**
Client ID: Batch ID: **R64361** TestNo: **N5506** Analysis Date: **9/15/2005** SeqNo: **767260**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthene	15.56	2.00	15	0	104	59.8	157				
Acenaphthylene	29.56	2.50	30	0	98.5	69.8	139				
Anthracene	1.429	0.250	1.5	0	95.3	63	136				

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

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Aerotech Environmental Laboratories

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CLIENT: City of Tucson, Environmental Services
Work Order: 05090073
Project: Toole-SVE

ANALYTICAL QC SUMMARY REPORT

TestCode: A_N5506_IH

Sample ID: **LCS-R64361** SampType: **LCS** TestCode: **A_N5506_IH** Units: **µg, Total** Prep Date: RunNo: **64361**
Client ID: Batch ID: **R64361** TestNo: **N5506** Analysis Date: **9/15/2005** SeqNo: **767260**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benz(a)anthracene	1.354	0.250	1.5	0	90.3	65.2	128				
Benzo(a)pyrene	1.224	0.250	1.5	0	81.6	49.4	122				
Benzo(b)fluoranthene	2.591	0.500	3	0	86.4	57.4	125				
Benzo(g,h,i)perylene	2.184	0.500	3	0	72.8	40.2	113				
Benzo(k)fluoranthene	1.294	0.250	1.5	0	86.3	59	123				
Chrysene	1.489	0.250	1.5	0	99.2	55.9	131				
Fluoranthene	2.867	0.500	3	0	95.6	66.3	129				
Fluorene	2.840	0.500	3	0	94.7	60.4	147				
Indeno(1,2,3-cd)pyrene	1.197	0.250	1.5	0	79.8	47.5	113				
Naphthalene	14.38	1.00	15	0	95.9	70.8	139				
Phenanthrene	1.480	0.250	1.5	0	98.7	64.1	144				
Pyrene	1.344	0.250	1.5	0	89.6	65.5	129				

Sample ID: **LCS** SampType: **LCS** TestCode: **A_N5506_IH** Units: **µg, Total** Prep Date: RunNo: **64391**
Client ID: Batch ID: **R64391** TestNo: **N5506** Analysis Date: **9/16/2005** SeqNo: **767652**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dibenz(a,h)anthracene	2.521	0.500	3	0	84.0	51.5	116				

Sample ID: **LCSD-R64361** SampType: **LCSD** TestCode: **A_N5506_IH** Units: **µg, Total** Prep Date: RunNo: **64361**
Client ID: Batch ID: **R64361** TestNo: **N5506** Analysis Date: **9/15/2005** SeqNo: **767261**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthene	16.09	2.00	15	0	107	59.8	157	15.56	3.37	30	
Acenaphthylene	30.55	2.50	30	0	102	69.8	139	29.56	3.30	30	
Anthracene	1.473	0.250	1.5	0	98.2	63	136	1.429	3.04	30	
Benz(a)anthracene	1.388	0.250	1.5	0	92.5	65.2	128	1.354	2.46	30	
Benzo(a)pyrene	1.256	0.250	1.5	0	83.7	49.4	122	1.224	2.62	30	
Benzo(b)fluoranthene	2.664	0.500	3	0	88.8	57.4	125	2.591	2.76	30	

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

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CLIENT: City of Tucson, Environmental Services
Work Order: 05090073
Project: Toole-SVE

ANALYTICAL QC SUMMARY REPORT

TestCode: A_N5506_IH

Sample ID: **LCSD-R64361** SampType: **LCSD** TestCode: **A_N5506_IH** Units: **µg, Total** Prep Date: RunNo: **64361**
Client ID: Batch ID: **R64361** TestNo: **N5506** Analysis Date: **9/15/2005** SeqNo: **767261**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(g,h,i)perylene	2.248	0.500	3	0	74.9	40.2	113	2.184	2.86	30	
Benzo(k)fluoranthene	1.329	0.250	1.5	0	88.6	59	123	1.294	2.67	30	
Chrysene	1.563	0.250	1.5	0	104	55.9	131	1.489	4.89	30	
Fluoranthene	2.934	0.500	3	0	97.8	66.3	129	2.867	2.31	30	
Fluorene	2.968	0.500	3	0	98.9	60.4	147	2.840	4.39	30	
Indeno(1,2,3-cd)pyrene	1.204	0.250	1.5	0	80.3	47.5	113	1.197	0.615	30	
Naphthalene	15.00	1.00	15	0	100	70.8	139	14.38	4.24	30	
Phenanthrene	1.519	0.250	1.5	0	101	64.1	144	1.480	2.58	30	
Pyrene	1.381	0.250	1.5	0	92.1	65.5	129	1.344	2.75	30	

Sample ID: **LCSD** SampType: **LCSD** TestCode: **A_N5506_IH** Units: **µg, Total** Prep Date: RunNo: **64391**
Client ID: Batch ID: **R64391** TestNo: **N5506** Analysis Date: **9/16/2005** SeqNo: **767653**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dibenz(a,h)anthracene	2.636	0.500	3	0	87.9	51.5	116	2.521	4.48	30	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

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www.aeroenvirolabs.com or call toll-free 866.772.5227

Lab Number: 05090073

Customer Number:	Page 1 of 1
Customer: CITY OF TUCSON - ENVIRONMENTAL SVCS	Sampler: GE, MC
Address: 100 N. STONE	Project Name: TOOLE-SVE
City, State, Zip: TUCSON 85719	Project Number:
Contact: Molly Collins	P.O. Number:
Phone: 520 791 5414 Fax: 5417	Fax Results: Y N
E-Mail Address: Molly Collins @ TUCSON AZ.gov	E-Mail Results: (Y) N

Sample Receipt

Temperature 24.0 °C
Custody Seals: Yes ____ No X
Custody Seals Intact: Yes ____ No X
Total # of Containers: 3

Turn Around Request

____ 24 Hours ____ 48 Hours
____ 72 Hours
____ 5 working Day
✓ Standard 10 Working Days
Subject to scheduling and availability (surcharges apply)

Analyses Requested

Sample Information

Lab #	JH Median	Flow Rate	Sample Identification	Date	Start	Stop	Final	Receipt	PAHs
01			TOOLE-INF090805	9.8.05	0930	1110			X
02			TOOLE-EFF-090805	9.8.05	0942	1122			X
03			TOOLE-P3-090805	9.8.05	1000	1140			X

Instructions / Special Requirements:

Date:	Time:	Samples Relinquished By:	Received By:
9.8.05	1245		
9/8/05	1630	JF	FedEx

All services are performed subject to the Terms & Conditions on the reverse side.

Aerotech Environmental Laboratories Sample Receipt Checklist

Project Checked By: KEV

Laboratory Number: 05090073	Checklist completed by: [signature] Signature/Date 9/8
Client Name: City of Tucson	
Matrix: Air / Carrier Name: Client	Date/Time Rec'd: 9/8/05 1245 By: JF

Temperature of Samples? 24.0 °C *Circle one:* Blue Ice Wet Ice Not Present

	Yes	No*	Not Present
Shipping container/cooler in good condition?	✓		
Custody seals intact on shipping container/cooler?			✓
Custody seals intact on sample containers?			✓
Chain of Custody present and relinquished/received properly?	✓		
Chain of Custody agrees with sample labels?	✓		
Samples in proper containers/bottles?	✓		
Sample containers intact?	✓		
All samples received within holding time?	✓		**See Comment about Chlorine and pH
Is there sufficient sample volume to perform the tests?	✓		
40mL vials for volatiles & SOCs received with zero headspace?			N/A

Soil Containers:
Brass Sleeve____
Glass Jar____
Methanol____
Plastic Bag____
Encore Samplers____

Total number of bottles received: 3	IH sample media:
If applicable, how many sample bottles were shipped from AEL-Tucson? 3	N/A

Number of containers received by preservative and by sample number: (If more than 15 samples are rec'd, please continue on separate sheet(s))

Preservative	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
A-General	1	1	1												
B-HNO3															
C-H2SO4															
D-HCl															
E-Na2S2O3															
F-NaOH															
G-Sulfide															
H-Na Sulfite															
I-MCAA															
J-Methanol															
K-HAA															
L-Other															

Water-pH acceptable upon receipt? Yes No N/A

Preservative & pH		pH of samples upon receipt	If pH requires adjustment, list sample number, and reagent ID. number
Metals	<2		
Nutrients	<2		
Total Phenols	<2		
413 (O&G)	<2		
418 (TPH)	<2		
Cyanide	>12		
Sulfide	>9		

Any No response must be detailed in the comments section below. Contact the PM immediately to determine how to proceed. Refer to SOP 11-001.04, Section 1.8.6. Continue on back if additional space is needed.

****The holding time for pH and Total Residual Chlorine analysis is immediate. For the most accurate result, the pH and Total Residual Chlorine should be taken in the field within 15 minutes of sampling.***

Comments:

Corrective Action:

Aerotech Environmental Laboratories
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Tuesday, September 13, 2005

Nancy Petersen
City of Tucson
100 North Stone Avenue
2nd Floor
Tucson, AZ 85701

TEL: (520) 791-5414
FAX (520) 791-5417

RECEIVED
2005
ENVIRONMENTAL SERVICES
100 N. STONE AVE., 2ND FLOOR

RE: TOOLE-SVE

Order No.: 05090074

Dear Nancy Petersen:

Aerotech Environmental received 3 sample(s) on 9/8/2005 for the analyses presented in the following report.

This report includes the following information:
- Case Narrative.
- Analytical Report: includes test results, report limit (Limit), any applicable data qualifier (Qual), units, dilution factor (DF), and date analyzed.
- QC Summary Report.

This communication is intended only for the individual or entity to whom it is directed. It may contain information that is privileged, confidential, or otherwise exempt from disclosure under applicable law. Dissemination, distribution, or copying of this communication by anyone other than the intended recipient, or a duly designated employee or agent of such recipient, is prohibited. If you have received this communication in error, please notify us immediately and destroy this message and all attachments thereto. If you have any questions regarding these test results, please do not hesitate to call.

Sincerely,

KRVault

Korky Vault
Service Center Manager

Aerotech Environmental **Date:** *13-Sep-05*

CLIENT: City of Tucson
Project: TOOLE-SVE
Lab Order: 05090074

CASE NARRATIVE

Samples were analyzed using methods outlined in references such as:

Standard Methods for the Examination of Water and Wastewater, 19th Edition, 1995.

Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Revised March 1983.

Methods for the Determination of Organic Compounds in Drinking Water: Supplement III, EPA/600/R-95/131, August 1995.

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition.

40 CFR, Part 136, Revised 1998. Appendix A to Part 136 - Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater.

NIOSH Manual of Analytical Methods, Fourth Edition, 1994.

Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, Second Edition, 1999.

Aerotech Environmental Laboratories (AEL) holds Arizona certification no. AZ0610 and AEL-Tucson holds Arizona certification no. AZ0609.

Aerotech Environmental Laboratories (Laboratory ID 154268) is accredited by the American Industrial Hygiene Association (AIHA) in the industrial hygiene program for the analytical techniques noted on the scope of accreditation.

Analytical Comments:

All method blanks and laboratory control spikes met EPA method and/or laboratory quality control objectives for the analyses included in this report.

Please note that sample ID Toole-Eff-090805 WO# 05090074-02 has been cancelled. The laboratory has notified that there is no sample in the canister. A resample has been scheduled for 9/12/05.

Data Qualifiers:
Listed below are the data qualifiers used in your analytical report to explain any analytical or quality control issues. You will find them noted in your report under the column header "QUAL". Any quality control deficiencies that cannot be adequately described by these qualifiers will be addressed in the analytical comments section of this case narrative.

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CLIENT: City of Tucson
Project: TOOLE-SVE
Lab Order: 05090074

CASE NARRATIVE

D2 Sample required dilution due to high concentration of target analyte.

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Aerotech Environmental

Date: *13-Sep-05*

CLIENT: City of Tucson
Lab Order: 05090074
Project: TOOLE-SVE
Lab ID: 05090074-01A

Client Sample ID: TOOLE-INF-090805
Tag Number: 01301
Collection Date: 9/8/2005 9:15:00 AM
Matrix: AIR

Analyses	ppbv Result	ppbv Limit	µg/L Result	µg/L Limit	Qual	DF	Date Analyzed
VOLATILE ORGANICS IN AIR		TO15					Analyst: JG
1,1,1-Trichloroethane	< 0.50	0.50	< 0.0028	0.0028		1	9/13/2005
1,1,2,2-Tetrachloroethane	< 0.50	0.50	< 0.0035	0.0035		1	9/13/2005
1,1,2-Trichloroethane	< 0.50	0.50	< 0.0028	0.0028		1	9/13/2005
1,1-Dichloroethane	< 0.50	0.50	< 0.0021	0.0021		1	9/13/2005
1,1-Dichloroethene	< 0.50	0.50	< 0.0020	0.0020		1	9/13/2005
1,2,4-Trichlorobenzene	< 1.0	1.0	< 0.0075	0.0075		1	9/13/2005
1,2,4-Trimethylbenzene	0.55	0.50	0.0027	0.0025		1	9/13/2005
1,2-Dibromoethane	< 0.50	0.50	< 0.0039	0.0039		1	9/13/2005
1,2-Dichlorobenzene	< 0.50	0.50	< 0.0031	0.0031		1	9/13/2005
1,2-Dichloroethane	< 0.50	0.50	< 0.0021	0.0021		1	9/13/2005
1,2-Dichloropropane	< 0.50	0.50	< 0.0024	0.0024		1	9/13/2005
1,3,5-Trimethylbenzene	< 0.50	0.50	< 0.0025	0.0025		1	9/13/2005
1,3-Butadiene	< 0.50	0.50	< 0.0011	0.0011		1	9/13/2005
1,3-Dichlorobenzene	< 0.50	0.50	< 0.0031	0.0031		1	9/13/2005
1,4-Dichlorobenzene	< 0.50	0.50	< 0.0031	0.0031		1	9/13/2005
2,2,4-Trimethylpentane	3.6	0.50	0.017	0.0024		1	9/13/2005
2-Butanone (MEK)	1.5	1.0	0.0045	0.0030		1	9/13/2005
2-Hexanone	< 1.0	1.0	< 0.0042	0.0042		1	9/13/2005
2-Propanol	< 1.0	1.0	< 0.0025	0.0025		1	9/13/2005
4-Ethyltoluene	< 0.50	0.50	< 0.0022	0.0022		1	9/13/2005
4-Methyl-2-pentanone	< 1.0	1.0	< 0.0042	0.0042		1	9/13/2005
Acetone	10	5.0	0.024	0.012		1	9/13/2005
Allyl chloride	< 0.50	0.50	< 0.00080	0.00080		1	9/13/2005
Benzene	1.2	0.50	0.0039	0.0016		1	9/13/2005
Benzyl chloride	< 2.0	2.0	< 0.011	0.011		1	9/13/2005
Bromodichloromethane	< 0.50	0.50	< 0.0034	0.0034		1	9/13/2005

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

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Aerotech Environmental

Date: *13-Sep-05*

CLIENT: City of Tucson
Lab Order: 05090074
Project: TOOLE-SVE
Lab ID: 05090074-01A

Client Sample ID: TOOLE-INF-090805
Tag Number: 01301
Collection Date: 9/8/2005 9:15:00 AM
Matrix: AIR

Analyses	ppbv Result	ppbv Limit	µg/L Result	µg/L Limit	Qual	DF	Date Analyzed
VOLATILE ORGANICS IN AIR		TO15					Analyst: JG
Bromoethene(Vinyl Bromide)	< 0.50	0.50	< 0.0011	0.0011		1	9/13/2005
Bromoform	< 0.50	0.50	< 0.0052	0.0052		1	9/13/2005
Bromomethane	< 0.50	0.50	< 0.0020	0.0020		1	9/13/2005
Carbon disulfide	< 0.50	0.50	< 0.0016	0.0016		1	9/13/2005
Carbon tetrachloride	< 0.50	0.50	< 0.0032	0.0032		1	9/13/2005
Chlorobenzene	< 0.50	0.50	< 0.0024	0.0024		1	9/13/2005
Chloroethane	< 0.50	0.50	< 0.0013	0.0013		1	9/13/2005
Chloroform	< 0.50	0.50	< 0.0025	0.0025		1	9/13/2005
Chloromethane	0.54	0.50	0.0011	0.0010		1	9/13/2005
cis-1,2-Dichloroethene	< 0.50	0.50	< 0.0020	0.0020		1	9/13/2005
cis-1,3-Dichloropropene	< 0.50	0.50	< 0.0023	0.0023		1	9/13/2005
Cyclohexane	< 0.50	0.50	< 0.0017	0.0017		1	9/13/2005
Dibromochloromethane	< 0.50	0.50	< 0.0043	0.0043		1	9/13/2005
Dichlorodifluoromethane(F-12)	0.73	0.50	0.0037	0.0025		1	9/13/2005
Dichlorotetrafluoroethane(F-114)	< 0.50	0.50	< 0.0036	0.0036		1	9/13/2005
Ethyl Acetate	0.79	0.50	0.0029	0.0018		1	9/13/2005
Ethylbenzene	0.72	0.50	0.0032	0.0022		1	9/13/2005
Heptane	1.5	0.50	0.0062	0.0021		1	9/13/2005
Hexachlorobutadiene	< 1.0	1.0	< 0.011	0.011		1	9/13/2005
Hexane	1.7	0.50	0.0061	0.0018		1	9/13/2005
m&p-Xylene	2.2	1.0	0.0097	0.0044		1	9/13/2005
Methyl tert-butyl ether	1.1	1.0	0.0040	0.0037		1	9/13/2005
Methylene chloride	< 0.50	0.50	< 0.0018	0.0018		1	9/13/2005
o-Xylene	0.65	0.50	0.0029	0.0022		1	9/13/2005
Propene (Propylene)	< 0.50	0.50	< 0.00088	0.00088		1	9/13/2005
Styrene	< 0.50	0.50	< 0.0022	0.0022		1	9/13/2005

Qualifiers:

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R - RPD outside accepted recovery limits
E - Value above quantitation range

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Tucson Facility: 4455 S. Park Ave. Ste. 110 Tucson, AZ 85714 Phone: 520.807.3801 Fax: 520.807.3803
Corporate Address: 1501 W. Knudsen Drive, Phoenix, Arizona 85027 Phone: 623.780.4800 Toll Free: 800.651.4802 Fax: 623.780.7695 www.aerotechlabs.com

Aerotech Environmental

Date: *13-Sep-05*

CLIENT: City of Tucson
Lab Order: 05090074
Project: TOOLE-SVE
Lab ID: 05090074-01A

Client Sample ID: TOOLE-INF-090805
Tag Number: 01301
Collection Date: 9/8/2005 9:15:00 AM
Matrix: AIR

Analyses	ppbv Result	ppbv Limit	µg/L Result	µg/L Limit	Qual	DF	Date Analyzed
VOLATILE ORGANICS IN AIR		TO15					Analyst: JG
Tetrachloroethene	< 0.50	0.50	< 0.0034	0.0034		1	9/13/2005
Tetrahydrofuran	< 2.0	2.0	< 0.0060	0.0060		1	9/13/2005
Toluene	3.2	0.50	0.012	0.0019		1	9/13/2005
trans-1,2-Dichloroethene	< 0.50	0.50	< 0.0020	0.0020		1	9/13/2005
trans-1,3-Dichloropropene	< 0.50	0.50	< 0.0023	0.0023		1	9/13/2005
Trichloroethene	< 0.50	0.50	< 0.0028	0.0028		1	9/13/2005
Trichlorofluoromethane(F-11)	< 0.50	0.50	< 0.0028	0.0028		1	9/13/2005
Trichlorotrifluoroethane(F-113)	< 0.50	0.50	< 0.0039	0.0039		1	9/13/2005
Vinyl acetate	< 0.50	0.50	< 0.0018	0.0018		1	9/13/2005
Vinyl chloride	< 0.50	0.50	< 0.0013	0.0013		1	9/13/2005
Surr: 4-Bromofluorobenzene	98.6 %REC	70-130	-	-		1	9/13/2005

Qualifiers:

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Aerotech Environmental

Date: *13-Sep-05*

CLIENT: City of Tucson
Lab Order: 05090074
Project: TOOLE-SVE
Lab ID: 05090074-03A

Client Sample ID: TOOLE-P3-090805
Tag Number: 00232
Collection Date: 9/8/2005 9:50:00 AM
Matrix: AIR

Analyses	ppbv Result	ppbv Limit	µg/L Result	µg/L Limit	Qual	DF	Date Analyzed
VOLATILE ORGANICS IN AIR		TO15					Analyst: JG
1,1,1-Trichloroethane	< 10000	10000	< 55	55		20000	9/12/2005
1,1,2,2-Tetrachloroethane	< 10000	10000	< 70	70		20000	9/12/2005
1,1,2-Trichloroethane	< 10000	10000	< 55	55		20000	9/12/2005
1,1-Dichloroethane	< 10000	10000	< 41	41		20000	9/12/2005
1,1-Dichloroethene	< 10000	10000	< 40	40		20000	9/12/2005
1,2,4-Trichlorobenzene	< 20000	20000	< 150	150		20000	9/12/2005
1,2,4-Trimethylbenzene	47000	10000	230	50	D2	20000	9/12/2005
1,2-Dibromoethane	< 10000	10000	< 78	78		20000	9/12/2005
1,2-Dichlorobenzene	< 10000	10000	< 61	61		20000	9/12/2005
1,2-Dichloroethane	< 10000	10000	< 41	41		20000	9/12/2005
1,2-Dichloropropane	< 10000	10000	< 47	47		20000	9/12/2005
1,3,5-Trimethylbenzene	19000	10000	95	50	D2	20000	9/12/2005
1,3-Butadiene	< 10000	10000	< 22	22		20000	9/12/2005
1,3-Dichlorobenzene	< 10000	10000	< 61	61		20000	9/12/2005
1,4-Dichlorobenzene	< 10000	10000	< 61	61		20000	9/12/2005
2,2,4-Trimethylpentane	490000	10000	2300	47	D2	20000	9/12/2005
2-Butanone (MEK)	< 20000	20000	< 60	60		20000	9/12/2005
2-Hexanone	< 20000	20000	< 83	83		20000	9/12/2005
2-Propanol	< 20000	20000	< 50	50		20000	9/12/2005
4-Ethyltoluene	19000	10000	84	44	D2	20000	9/12/2005
4-Methyl-2-pentanone	< 20000	20000	< 83	83		20000	9/12/2005
Acetone	< 100000	100000	< 240	240		20000	9/12/2005
Allyl chloride	< 10000	10000	< 16	16		20000	9/12/2005
Benzene	110000	10000	360	32	D2	20000	9/12/2005
Benzyl chloride	< 40000	40000	< 210	210		20000	9/12/2005
Bromodichloromethane	< 10000	10000	< 68	68		20000	9/12/2005

Qualifiers:
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Aerotech Environmental

Date: *13-Sep-05*

CLIENT: City of Tucson
Lab Order: 05090074
Project: TOOLE-SVE
Lab ID: 05090074-03A

Client Sample ID: TOOLE-P3-090805
Tag Number: 00232
Collection Date: 9/8/2005 9:50:00 AM
Matrix: AIR

Analyses	ppbv Result	ppbv Limit	µg/L Result	µg/L Limit	Qual	DF	Date Analyzed
VOLATILE ORGANICS IN AIR		TO15					Analyst: JG
Bromoethene(Vinyl Bromide)	< 10000	10000	< 22	22		20000	9/12/2005
Bromoform	< 10000	10000	< 100	100		20000	9/12/2005
Bromomethane	< 10000	10000	< 40	40		20000	9/12/2005
Carbon disulfide	< 10000	10000	< 32	32		20000	9/12/2005
Carbon tetrachloride	< 10000	10000	< 64	64		20000	9/12/2005
Chlorobenzene	< 10000	10000	< 47	47		20000	9/12/2005
Chloroethane	< 10000	10000	< 27	27		20000	9/12/2005
Chloroform	< 10000	10000	< 50	50		20000	9/12/2005
Chloromethane	< 10000	10000	< 21	21		20000	9/12/2005
cis-1,2-Dichloroethene	< 10000	10000	< 40	40		20000	9/12/2005
cis-1,3-Dichloropropene	< 10000	10000	< 46	46		20000	9/12/2005
Cyclohexane	< 10000	10000	< 35	35		20000	9/12/2005
Dibromochloromethane	< 10000	10000	< 86	86		20000	9/12/2005
Dichlorodifluoromethane(F-12)	< 10000	10000	< 50	50		20000	9/12/2005
Dichlorotetrafluoroethane(F-114)	< 10000	10000	< 71	71		20000	9/12/2005
Ethyl Acetate	< 10000	10000	< 37	37		20000	9/12/2005
Ethylbenzene	110000	10000	480	44	D2	20000	9/12/2005
Heptane	210000	10000	870	42	D2	20000	9/12/2005
Hexachlorobutadiene	< 20000	20000	< 220	220		20000	9/12/2005
Hexane	190000	10000	680	36	D2	20000	9/12/2005
m&p-Xylene	390000	20000	1700	88	D2	20000	9/12/2005
Methyl tert-butyl ether	340000	20000	1200	73	D2	20000	9/12/2005
Methylene chloride	< 10000	10000	< 35	35		20000	9/12/2005
o-Xylene	91000	10000	400	44	D2	20000	9/12/2005
Propene (Propylene)	< 10000	10000	< 18	18		20000	9/12/2005
Styrene	< 10000	10000	< 43	43		20000	9/12/2005

Qualifiers:

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Aerotech Environmental

Date: *13-Sep-05*

CLIENT: City of Tucson
Lab Order: 05090074
Project: TOOLE-SVE
Lab ID: 05090074-03A

Client Sample ID: TOOLE-P3-090805
Tag Number: 00232
Collection Date: 9/8/2005 9:50:00 AM
Matrix: AIR

Analyses	ppbv Result	ppbv Limit	µg/L Result	µg/L Limit	Qual	DF	Date Analyzed
VOLATILE ORGANICS IN AIR		TO15					Analyst: JG
Tetrachloroethene	< 10000	10000	< 69	69		20000	9/12/2005
Tetrahydrofuran	< 40000	40000	< 120	120		20000	9/12/2005
Toluene	370000	10000	1400	38	D2	20000	9/12/2005
trans-1,2-Dichloroethene	< 10000	10000	< 40	40		20000	9/12/2005
trans-1,3-Dichloropropene	< 10000	10000	< 46	46		20000	9/12/2005
Trichloroethene	< 10000	10000	< 55	55		20000	9/12/2005
Trichlorofluoromethane(F-11)	< 10000	10000	< 57	57		20000	9/12/2005
Trichlorotrifluoroethane(F-113)	< 10000	10000	< 78	78		20000	9/12/2005
Vinyl acetate	< 10000	10000	< 36	36		20000	9/12/2005
Vinyl chloride	< 10000	10000	< 26	26		20000	9/12/2005
Surr: 4-Bromofluorobenzene	97.7 %REC	70-130	-	-		20000	9/12/2005

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
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Aerotech Environmental

Date: *13-Sep-05*

CLIENT: City of Tucson
Work Order: 05090074
Project: TOOLE-SVE

ANALYTICAL QC SUMMARY REPORT

TestCode: TO15

Sample ID: **MB-R64145** SampType: **MBLK** TestCode: **TO15** Units: **ppbv** Prep Date: RunNo: **64145**
Client ID: Batch ID: **R64145** TestNo: **TO15** Analysis Date: **9/12/2005** SeqNo: **764381**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1-Trichloroethane	< 0.50	0.50									
1,1,2,2-Tetrachloroethane	< 0.50	0.50									
1,1,2-Trichloroethane	< 0.50	0.50									
1,1-Dichloroethane	< 0.50	0.50									
1,1-Dichloroethene	< 0.50	0.50									
1,2,4-Trichlorobenzene	< 1.0	1.0									
1,2,4-Trimethylbenzene	< 0.50	0.50									
1,2-Dibromoethane	< 0.50	0.50									
1,2-Dichlorobenzene	< 0.50	0.50									
1,2-Dichloroethane	< 0.50	0.50									
1,2-Dichloropropane	< 0.50	0.50									
1,3,5-Trimethylbenzene	< 0.50	0.50									
1,3-Butadiene	< 0.50	0.50									
1,3-Dichlorobenzene	< 0.50	0.50									
1,4-Dichlorobenzene	< 0.50	0.50									
2,2,4-Trimethylpentane	< 0.50	0.50									
2-Butanone (MEK)	< 1.0	1.0									
2-Hexanone	< 1.0	1.0									
2-Propanol	< 1.0	1.0									
4-Ethyltoluene	< 0.50	0.50									
4-Methyl-2-pentanone	< 1.0	1.0									
Acetone	< 5.0	5.0									
Allyl chloride	< 0.50	0.50									
Benzene	< 0.50	0.50									
Benzyl chloride	< 2.0	2.0									
Bromodichloromethane	< 0.50	0.50									
Bromoethene(Vinyl Bromide)	< 0.50	0.50									
Bromoform	< 0.50	0.50									

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

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CLIENT: City of Tucson
Work Order: 05090074
Project: TOOLE-SVE

ANALYTICAL QC SUMMARY REPORT

TestCode: TO15

Sample ID: **MB-R64145** SampType: **MBLK** TestCode: **TO15** Units: **ppbv** Prep Date: RunNo: **64145**
Client ID: Batch ID: **R64145** TestNo: **TO15** Analysis Date: **9/12/2005** SeqNo: **764381**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromomethane	< 0.50	0.50									
Carbon disulfide	< 0.50	0.50									
Carbon tetrachloride	< 0.50	0.50									
Chlorobenzene	< 0.50	0.50									
Chloroethane	< 0.50	0.50									
Chloroform	< 0.50	0.50									
Chloromethane	< 0.50	0.50									
cis-1,2-Dichloroethene	< 0.50	0.50									
cis-1,3-Dichloropropene	< 0.50	0.50									
Cyclohexane	< 0.50	0.50									
Dibromochloromethane	< 0.50	0.50									
Dichlorodifluoromethane(F-12)	< 0.50	0.50									
Dichlorotetrafluoroethane(F-114)	< 0.50	0.50									
Ethyl Acetate	< 0.50	0.50									
Ethylbenzene	< 0.50	0.50									
Heptane	< 0.50	0.50									
Hexachlorobutadiene	< 1.0	1.0									
Hexane	< 0.50	0.50									
m&p-Xylene	< 1.0	1.0									
Methyl tert-butyl ether	< 1.0	1.0									
Methylene chloride	< 0.50	0.50									
o-Xylene	< 0.50	0.50									
Propene (Propylene)	< 0.50	0.50									
Styrene	< 0.50	0.50									
Tetrachloroethene	< 0.50	0.50									
Tetrahydrofuran	< 2.0	2.0									
Toluene	< 0.50	0.50									
trans-1,2-Dichloroethene	< 0.50	0.50									
trans-1,3-Dichloropropene	< 0.50	0.50									

Qualifiers:
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- H Holding times for preparation or analysis exceeded
- R RPD outside accepted recovery limits
- J Analyte detected below quantitation limits
- S Spike Recovery outside accepted recovery limits

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CLIENT: City of Tucson
Work Order: 05090074
Project: TOOLE-SVE

ANALYTICAL QC SUMMARY REPORT

TestCode: TO15

Sample ID: **MB-R64145** SampType: **MBLK** TestCode: **TO15** Units: **ppbv** Prep Date: RunNo: **64145**
Client ID: Batch ID: **R64145** TestNo: **TO15** Analysis Date: **9/12/2005** SeqNo: **764381**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Trichloroethene	< 0.50	0.50									
Trichlorofluoromethane(F-11)	< 0.50	0.50									
Trichlorotrifluoroethane(F-113)	< 0.50	0.50									
Vinyl acetate	< 0.50	0.50									
Vinyl chloride	< 0.50	0.50									
Surr: 4-Bromofluorobenzene	9.580	0.50	10	0	95.8	70	130				

Sample ID: **LCS-R64145** SampType: **LCS** TestCode: **TO15** Units: **ppbv** Prep Date: RunNo: **64145**
Client ID: Batch ID: **R64145** TestNo: **TO15** Analysis Date: **9/12/2005** SeqNo: **764382**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1-Trichloroethane	9.090	0.50	10	0	90.9	65	135				
1,1,2,2-Tetrachloroethane	8.820	0.50	10	0	88.2	65	135				
1,1,2-Trichloroethane	9.130	0.50	10	0	91.3	65	135				
1,1-Dichloroethane	9.540	0.50	10	0	95.4	65	135				
1,1-Dichloroethene	10.01	0.50	10	0	100	65	135				
1,2,4-Trichlorobenzene	10.03	1.0	10	0	100	65	135				
1,2,4-Trimethylbenzene	10.53	0.50	10	0	105	65	135				
1,2-Dibromoethane	9.360	0.50	10	0	93.6	65	135				
1,2-Dichlorobenzene	9.620	0.50	10	0	96.2	65	135				
1,2-Dichloroethane	9.120	0.50	10	0	91.2	65	135				
1,2-Dichloropropane	9.460	0.50	10	0	94.6	65	135				
1,3,5-Trimethylbenzene	10.11	0.50	10	0	101	65	135				
1,3-Butadiene	9.170	0.50	10	0	91.7	65	135				
1,3-Dichlorobenzene	9.430	0.50	10	0	94.3	65	135				
1,4-Dichlorobenzene	9.490	0.50	10	0	94.9	65	135				
2,2,4-Trimethylpentane	10.09	0.50	10	0	101	65	135				
2-Butanone (MEK)	10.42	1.0	10	0	104	65	135				
2-Hexanone	10.37	1.0	10	0	104	65	135				

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

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Aerotech Environmental Laboratories

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CLIENT: City of Tucson
Work Order: 05090074
Project: TOOLE-SVE

ANALYTICAL QC SUMMARY REPORT

TestCode: TO15

Sample ID: **LCS-R64145** SampType: **LCS** TestCode: **TO15** Units: **ppbv** Prep Date: RunNo: **64145**
Client ID: Batch ID: **R64145** TestNo: **TO15** Analysis Date: **9/12/2005** SeqNo: **764382**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2-Propanol	9.300	1.0	10	0	93.0	65	135				
4-Ethyltoluene	10.37	0.50	10	0	104	65	135				
4-Methyl-2-pentanone	10.04	1.0	10	0	100	65	135				
Acetone	8.220	5.0	10	0	82.2	65	135				
Allyl chloride	11.36	0.50	10	0	114	65	135				
Benzene	10.80	0.50	10	0	108	65	135				
Benzyl chloride	10.21	2.0	10	0	102	65	135				
Bromodichloromethane	8.770	0.50	10	0	87.7	65	135				
Bromoethene(Vinyl Bromide)	8.900	0.50	10	0	89.0	65	135				
Bromoform	8.540	0.50	10	0	85.4	65	135				
Bromomethane	8.810	0.50	10	0	88.1	65	135				
Carbon disulfide	9.440	0.50	10	0	94.4	65	135				
Carbon tetrachloride	8.720	0.50	10	0	87.2	65	135				
Chlorobenzene	9.270	0.50	10	0	92.7	65	135				
Chloroethane	8.850	0.50	10	0	88.5	65	135				
Chloroform	8.820	0.50	10	0	88.2	65	135				
Chloromethane	8.690	0.50	10	0	86.9	65	135				
cis-1,2-Dichloroethene	10.68	0.50	10	0	107	65	135				
cis-1,3-Dichloropropene	10.89	0.50	10	0	109	65	135				
Cyclohexane	11.22	0.50	10	0	112	65	135				
Dibromochloromethane	8.820	0.50	10	0	88.2	65	135				
Dichlorodifluoromethane(F-12)	8.260	0.50	10	0	82.6	65	135				
Dichlorotetrafluoroethane(F-114)	8.820	0.50	10	0	88.2	65	135				
Ethyl Acetate	10.32	0.50	10	0	103	65	135				
Ethylbenzene	10.67	0.50	10	0	107	65	135				
Heptane	9.310	0.50	10	0	93.1	65	135				
Hexachlorobutadiene	8.760	1.0	10	0	87.6	65	135				
Hexane	11.71	0.50	10	0	117	65	135				
m&p-Xylene	20.87	1.0	20	0	104	65	135				

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

■ Main Laboratory: 4645 E. Cotton Center Boulevard, Building 3, Suite 189 Phoenix, AZ 85040 Phone: 602.437.3340 Toll Free: 866.772.5227 Fax. 623.445.6192 www.aeroenvirolabs.com
■ Tucson Facility: 4455 S. Park Ave. Ste. 110 Tucson, AZ 85714 Phone: 520.807.3801 Fax: 520.807.3803
■ Corporate Address: 1501 W. Knudsen Drive, Phoenix, Arizona 85027 Phone: 623.780.4800

Aerotech Environmental Laboratories

a division of Aerotech Laboratories, Inc.

CLIENT: City of Tucson
Work Order: 05090074
Project: TOOLE-SVE

ANALYTICAL QC SUMMARY REPORT

TestCode: TO15

Sample ID: **LCS-R64145** SampType: **LCS** TestCode: **TO15** Units: **ppbv** Prep Date: RunNo: **64145**
Client ID: Batch ID: **R64145** TestNo: **TO15** Analysis Date: **9/12/2005** SeqNo: **764382**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methyl tert-butyl ether	12.55	1.0	10	0	126	65	135				
Methylene chloride	8.580	0.50	10	0	85.8	65	135				
o-Xylene	9.680	0.50	10	0	96.8	65	135				
Propene (Propylene)	10.48	0.50	10	0	105	65	135				
Styrene	10.81	0.50	10	0	108	65	135				
Tetrachloroethene	9.680	0.50	10	0	96.8	65	135				
Tetrahydrofuran	11.13	2.0	10	0	111	65	135				
Toluene	10.71	0.50	10	0	107	65	135				
trans-1,2-Dichloroethene	10.72	0.50	10	0	107	65	135				
trans-1,3-Dichloropropene	10.61	0.50	10	0	106	65	135				
Trichloroethene	9.670	0.50	10	0	96.7	65	135				
Trichlorofluoromethane(F-11)	7.870	0.50	10	0	78.7	65	135				
Trichlorotrifluoroethane(F-113)	9.250	0.50	10	0	92.5	65	135				
Vinyl acetate	11.24	0.50	10	0	112	65	135				
Vinyl chloride	9.210	0.50	10	0	92.1	65	135				
Surr: 4-Bromofluorobenzene	9.780	0.50	10	0	97.8	70	130				

Sample ID: **LCSD-R64145** SampType: **LCSD** TestCode: **TO15** Units: **ppbv** Prep Date: RunNo: **64145**
Client ID: Batch ID: **R64145** TestNo: **TO15** Analysis Date: **9/12/2005** SeqNo: **764383**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1-Trichloroethane	9.370	0.50	10	0	93.7	65	135	9.090	3.03	25	
1,1,2,2-Tetrachloroethane	9.140	0.50	10	0	91.4	65	135	8.820	3.56	25	
1,1,2-Trichloroethane	9.390	0.50	10	0	93.9	65	135	9.130	2.81	25	
1,1-Dichloroethane	9.710	0.50	10	0	97.1	65	135	9.540	1.77	25	
1,1-Dichloroethene	10.20	0.50	10	0	102	65	135	10.01	1.88	25	
1,2,4-Trichlorobenzene	10.46	1.0	10	0	105	65	135	10.03	4.20	25	
1,2,4-Trimethylbenzene	10.91	0.50	10	0	109	65	135	10.53	3.54	25	
1,2-Dibromoethane	9.610	0.50	10	0	96.1	65	135	9.360	2.64	25	

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

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Aerotech Environmental Laboratories

a division of Aerotech Laboratories, Inc.

CLIENT: City of Tucson
Work Order: 05090074
Project: TOOLE-SVE

ANALYTICAL QC SUMMARY REPORT

TestCode: TO15

Sample ID: **LCSD-R64145** SampType: **LCSD** TestCode: **TO15** Units: **ppbv** Prep Date: RunNo: **64145**
Client ID: Batch ID: **R64145** TestNo: **TO15** Analysis Date: **9/12/2005** SeqNo: **764383**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2-Dichlorobenzene	9.970	0.50	10	0	99.7	65	135	9.620	3.57	25	
1,2-Dichloroethane	9.410	0.50	10	0	94.1	65	135	9.120	3.13	25	
1,2-Dichloropropane	9.610	0.50	10	0	96.1	65	135	9.460	1.57	25	
1,3,5-Trimethylbenzene	10.50	0.50	10	0	105	65	135	10.11	3.78	25	
1,3-Butadiene	9.320	0.50	10	0	93.2	65	135	9.170	1.62	25	
1,3-Dichlorobenzene	9.760	0.50	10	0	97.6	65	135	9.430	3.44	25	
1,4-Dichlorobenzene	9.840	0.50	10	0	98.4	65	135	9.490	3.62	25	
2,2,4-Trimethylpentane	10.17	0.50	10	0	102	65	135	10.09	0.790	25	
2-Butanone (MEK)	10.71	1.0	10	0	107	65	135	10.42	2.74	25	
2-Hexanone	10.64	1.0	10	0	106	65	135	10.37	2.57	25	
2-Propanol	9.630	1.0	10	0	96.3	65	135	9.300	3.49	25	
4-Ethyltoluene	10.75	0.50	10	0	108	65	135	10.37	3.60	25	
4-Methyl-2-pentanone	10.30	1.0	10	0	103	65	135	10.04	2.56	25	
Acetone	8.560	5.0	10	0	85.6	65	135	8.220	4.05	25	
Allyl chloride	11.41	0.50	10	0	114	65	135	11.36	0.439	25	
Benzene	10.87	0.50	10	0	109	65	135	10.80	0.646	25	
Benzyl chloride	10.75	2.0	10	0	108	65	135	10.21	5.15	25	
Bromodichloromethane	9.060	0.50	10	0	90.6	65	135	8.770	3.25	25	
Bromoethene(Vinyl Bromide)	9.310	0.50	10	0	93.1	65	135	8.900	4.50	25	
Bromoform	8.890	0.50	10	0	88.9	65	135	8.540	4.02	25	
Bromomethane	9.060	0.50	10	0	90.6	65	135	8.810	2.80	25	
Carbon disulfide	9.570	0.50	10	0	95.7	65	135	9.440	1.37	25	
Carbon tetrachloride	9.020	0.50	10	0	90.2	65	135	8.720	3.38	25	
Chlorobenzene	9.550	0.50	10	0	95.5	65	135	9.270	2.98	25	
Chloroethane	9.150	0.50	10	0	91.5	65	135	8.850	3.33	25	
Chloroform	9.120	0.50	10	0	91.2	65	135	8.820	3.34	25	
Chloromethane	8.820	0.50	10	0	88.2	65	135	8.690	1.48	25	
cis-1,2-Dichloroethene	10.92	0.50	10	0	109	65	135	10.68	2.22	25	
cis-1,3-Dichloropropene	11.14	0.50	10	0	111	65	135	10.89	2.27	25	

Qualifiers:
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ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

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■ Corporate Address: 1501 W. Knudsen Drive, Phoenix, Arizona 85027

Aerotech Environmental Laboratories

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CLIENT: City of Tucson
Work Order: 05090074
Project: TOOLE-SVE

ANALYTICAL QC SUMMARY REPORT

TestCode: TO15

Sample ID: **LCSD-R64145** SampType: **LCSD** TestCode: **TO15** Units: **ppbv** Prep Date: RunNo: **64145**
Client ID: Batch ID: **R64145** TestNo: **TO15** Analysis Date: **9/12/2005** SeqNo: **764383**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cyclohexane	11.36	0.50	10	0	114	65	135	11.22	1.24	25	
Dibromochloromethane	9.120	0.50	10	0	91.2	65	135	8.820	3.34	25	
Dichlorodifluoromethane(F-12)	8.350	0.50	10	0	83.5	65	135	8.260	1.08	25	
Dichlorotetrafluoroethane(F-114)	9.010	0.50	10	0	90.1	65	135	8.820	2.13	25	
Ethyl Acetate	10.78	0.50	10	0	108	65	135	10.32	4.36	25	
Ethylbenzene	10.97	0.50	10	0	110	65	135	10.67	2.77	25	
Heptane	9.490	0.50	10	0	94.9	65	135	9.310	1.91	25	
Hexachlorobutadiene	9.120	1.0	10	0	91.2	65	135	8.760	4.03	25	
Hexane	11.81	0.50	10	0	118	65	135	11.71	0.850	25	
m&p-Xylene	21.32	1.0	20	0	107	65	135	20.87	2.13	25	
Methyl tert-butyl ether	12.89	1.0	10	0	129	65	135	12.55	2.67	25	
Methylene chloride	8.770	0.50	10	0	87.7	65	135	8.580	2.19	25	
o-Xylene	9.970	0.50	10	0	99.7	65	135	9.680	2.95	25	
Propene (Propylene)	10.56	0.50	10	0	106	65	135	10.48	0.760	25	
Styrene	11.16	0.50	10	0	112	65	135	10.81	3.19	25	
Tetrachloroethene	9.970	0.50	10	0	99.7	65	135	9.680	2.95	25	
Tetrahydrofuran	11.56	2.0	10	0	116	65	135	11.13	3.79	25	
Toluene	10.89	0.50	10	0	109	65	135	10.71	1.67	25	
trans-1,2-Dichloroethene	10.86	0.50	10	0	109	65	135	10.72	1.30	25	
trans-1,3-Dichloropropene	10.88	0.50	10	0	109	65	135	10.61	2.51	25	
Trichloroethene	9.890	0.50	10	0	98.9	65	135	9.670	2.25	25	
Trichlorofluoromethane(F-11)	8.390	0.50	10	0	83.9	65	135	7.870	6.40	25	
Trichlorotrifluoroethane(F-113)	9.410	0.50	10	0	94.1	65	135	9.250	1.71	25	
Vinyl acetate	11.43	0.50	10	0	114	65	135	11.24	1.68	25	
Vinyl chloride	9.360	0.50	10	0	93.6	65	135	9.210	1.62	25	
Surr: 4-Bromofluorobenzene	9.900	0.50	10	0	99.0	70	130	9.780	0	0	

Qualifiers:
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- H Holding times for preparation or analysis exceeded
- R RPD outside accepted recovery limits
- J Analyte detected below quantitation limits
- S Spike Recovery outside accepted recovery limits

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Corporate Address: 1501 W. Knudsen Drive, Phoenix, Arizona 85027

Aerotech Environmental Laboratory Sample Receipt Checklist Project Checked By: KRW

Laboratory Number: 05090074	Checklist completed by: [signature] 9/8 Signature/Date
Client Name: City of Tucson	
Matrix: Air Carrier Name: Client	Date/Time Rec'd: 9/8/05 1245 By: JF

Temperature of Samples? 22.4 °C *Circle one:* Blue Ice Wet Ice Not Present

	Yes	No*	Not Present
Shipping container/cooler in good condition?	✓		
Custody seals intact on shipping container/cooler?			✓
Custody seals intact on sample containers?			✓
Chain of Custody present and relinquished/received properly?	✓		
Chain of Custody agrees with sample labels?	✓		
Samples in proper containers/bottles?	✓		
Sample containers intact?	✓		
All samples received within holding time?	✓		
Is there sufficient sample volume to perform the tests?	✓		
40mL vials for volatiles & SOCs received with zero headspace?			N/A

Soil Containers:
Brass Sleeve____
Glass Jar____
Methanol____
Plastic Bag____
Encore Samplers____

**See Comment about Chlorine and pH

Total number of bottles received: 3	IH sample media:
If applicable, how many sample bottles were shipped from AEL-Tucson? 3	N/A

Number of containers received by preservative and by sample number: (If more than 15 samples are rec'd, please continue on separate sheet(s))

Preservative	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
A-General	1	1	1												
B-HNO3															
C-H2SO4															
D-HCl															
E-Na2S2O3															
F-NaOH															
G-Sulfide															
H-Na Sulfite															
I-MCAA															
J-Methanol															
K-HAA															
L-Other															

Water-pH acceptable upon receipt? Yes No N/A

Preservative & pH	pH of samples upon receipt	If pH requires adjustment, list sample number, and reagent ID. number
Metals <2		
Nutrients <2		
Total Phenols <2		
413 (O&G) <2		
418 (TPH) <2		
Cyanide >12		
Sulfide >9		

Any No response must be detailed in the comments section below. Contact the PM immediately to determine how to proceed. Refer to SOP 11-001.04, Section 1.8.6. Continue on back if additional space is needed.

The holding time for pH and Total Residual Chlorine analysis is immediate. For the most accurate result, the pH and Total Residual Chlorine should be taken in the field within 15 minutes of sampling.

Comments:

Corrective Action:

Aerotech Environmental Laboratories
a division of Aerotech Laboratories, Inc.

Tuesday, September 13, 2005

Molly Collins
City of Tucson
100 North Stone Avenue
2nd Floor
Tucson, AZ 85701

TEL: (520) 791-5414
FAX (520) 791-5417

RECEIVED
2005
ENVIRONMENTAL SERVICES
100 N. STONE AVE., 2ND FLOOR

RE: 35 E Toole

Order No.: 05090082

Dear Molly Collins:

Aerotech Environmental received 1 sample(s) on 9/12/2005 for the analyses presented in the following report.

This report includes the following information:
- Case Narrative.
- Analytical Report: includes test results, report limit (Limit), any applicable data qualifier (Qual), units, dilution factor (DF), and date analyzed.
- QC Summary Report.

This communication is intended only for the individual or entity to whom it is directed. It may contain information that is privileged, confidential, or otherwise exempt from disclosure under applicable law. Dissemination, distribution, or copying of this communication by anyone other than the intended recipient, or a duly designated employee or agent of such recipient, is prohibited. If you have received this communication in error, please notify us immediately and destroy this message and all attachments thereto. If you have any questions regarding these test results, please do not hesitate to call.

Sincerely,

Korky Vault
Service Center Manager

Aerotech Environmental **Date:** *13-Sep-05*

CLIENT: City of Tucson
Project: 35 E Toole
Lab Order: 05090082

CASE NARRATIVE

Samples were analyzed using methods outlined in references such as:

Standard Methods for the Examination of Water and Wastewater, 19th Edition, 1995.

Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Revised March 1983.

Methods for the Determination of Organic Compounds in Drinking Water: Supplement III, EPA/600/R-95/131, August 1995.

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition.

40 CFR, Part 136, Revised 1998. Appendix A to Part 136 - Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater.

NIOSH Manual of Analytical Methods, Fourth Edition, 1994.

Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, Second Edition, 1999.

Aerotech Environmental Laboratories (AEL) holds Arizona certification no. AZ0610 and AEL-Tucson holds Arizona certification no. AZ0609.

Aerotech Environmental Laboratories (Laboratory ID 154268) is accredited by the American Industrial Hygiene Association (AIHA) in the industrial hygiene program for the analytical techniques noted on the scope of accreditation.

Analytical Comments:

All method blanks and laboratory control spikes met EPA method and/or laboratory quality control objectives for the analyses included in this report.

Data Qualifiers:
Listed below are the data qualifiers used in your analytical report to explain any analytical or quality control issues. You will find them noted in your report under the column header "QUAL". Any quality control deficiencies that cannot be adequately described by these qualifiers will be addressed in the analytical comments section of this case narrative

D2 Sample required dilution due to high concentration of target analyte.

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Aerotech Environmental Laboratories

a division of Aerotech Laboratories, Inc.

Aerotech Environmental

Date: *13-Sep-05*

CLIENT:	City of Tucson	**Client Sample ID:**	Toole-EFF-071305
Lab Order:	05090082	**Tag Number:**	01299
Project:	35 E Toole	**Collection Date:**	9/12/2005 10:11:00 AM
Lab ID:	05090082-01A	**Matrix:**	AIR

	ppbv		µg/L				
Analyses	**Result**	**Limit**	**Result**	**Limit**	**Qual**	**DF**	**Date Analyzed**
VOLATILE ORGANICS IN AIR		TO15					Analyst: JG
1,1,1-Trichloroethane	< 2.5	2.5	< 0.014	0.014		5	9/12/2005
1,1,2,2-Tetrachloroethane	< 2.5	2.5	< 0.017	0.017		5	9/12/2005
1,1,2-Trichloroethane	< 2.5	2.5	< 0.014	0.014		5	9/12/2005
1,1-Dichloroethane	< 2.5	2.5	< 0.010	0.010		5	9/12/2005
1,1-Dichloroethene	< 2.5	2.5	< 0.010	0.010		5	9/12/2005
1,2,4-Trichlorobenzene	< 5.0	5.0	< 0.038	0.038		5	9/12/2005
1,2,4-Trimethylbenzene	< 2.5	2.5	< 0.012	0.012		5	9/12/2005
1,2-Dibromoethane	< 2.5	2.5	< 0.020	0.020		5	9/12/2005
1,2-Dichlorobenzene	< 2.5	2.5	< 0.015	0.015		5	9/12/2005
1,2-Dichloroethane	< 2.5	2.5	< 0.010	0.010		5	9/12/2005
1,2-Dichloropropane	< 2.5	2.5	< 0.012	0.012		5	9/12/2005
1,3,5-Trimethylbenzene	< 2.5	2.5	< 0.012	0.012		5	9/12/2005
1,3-Butadiene	2.6	2.5	0.0058	0.0056		5	9/12/2005
1,3-Dichlorobenzene	< 2.5	2.5	< 0.015	0.015		5	9/12/2005
1,4-Dichlorobenzene	< 2.5	2.5	< 0.015	0.015		5	9/12/2005
2,2,4-Trimethylpentane	< 2.5	2.5	< 0.012	0.012		5	9/12/2005
2-Butanone (MEK)	< 5.0	5.0	< 0.015	0.015		5	9/12/2005
2-Hexanone	< 5.0	5.0	< 0.021	0.021		5	9/12/2005
2-Propanol	< 5.0	5.0	< 0.012	0.012		5	9/12/2005
4-Ethyltoluene	< 2.5	2.5	< 0.011	0.011		5	9/12/2005
4-Methyl-2-pentanone	< 5.0	5.0	< 0.021	0.021		5	9/12/2005
Acetone	< 25	25	< 0.060	0.060		5	9/12/2005
Allyl chloride	< 2.5	2.5	< 0.0040	0.0040		5	9/12/2005
Benzene	180	2.5	0.58	0.0081	D2	5	9/12/2005
Benzyl chloride	< 10	10	< 0.053	0.053		5	9/12/2005
Bromodichloromethane	< 2.5	2.5	< 0.017	0.017		5	9/12/2005

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

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Date: *13-Sep-05*

CLIENT:	City of Tucson	**Client Sample ID:**	Toole-EFF-071305
Lab Order:	05090082	**Tag Number:**	01299
Project:	35 E Toole	**Collection Date:**	9/12/2005 10:11:00 AM
Lab ID:	05090082-01A	**Matrix:**	AIR

	ppbv		µg/L				
Analyses	**Result**	**Limit**	**Result**	**Limit**	**Qual**	**DF**	**Date Analyzed**
VOLATILE ORGANICS IN AIR		TO15					Analyst: JG
Bromoethene(Vinyl Bromide)	< 2.5	2.5	< 0.0056	0.0056		5	9/12/2005
Bromoform	< 2.5	2.5	< 0.026	0.026		5	9/12/2005
Bromomethane	< 2.5	2.5	< 0.0099	0.0099		5	9/12/2005
Carbon disulfide	< 2.5	2.5	< 0.0079	0.0079		5	9/12/2005
Carbon tetrachloride	< 2.5	2.5	< 0.016	0.016		5	9/12/2005
Chlorobenzene	< 2.5	2.5	< 0.012	0.012		5	9/12/2005
Chloroethane	< 2.5	2.5	< 0.0067	0.0067		5	9/12/2005
Chloroform	< 2.5	2.5	< 0.012	0.012		5	9/12/2005
Chloromethane	< 2.5	2.5	< 0.0052	0.0052		5	9/12/2005
cis-1,2-Dichloroethene	< 2.5	2.5	< 0.010	0.010		5	9/12/2005
cis-1,3-Dichloropropene	< 2.5	2.5	< 0.012	0.012		5	9/12/2005
Cyclohexane	< 2.5	2.5	< 0.0087	0.0087		5	9/12/2005
Dibromochloromethane	< 2.5	2.5	< 0.022	0.022		5	9/12/2005
Dichlorodifluoromethane(F-12)	< 2.5	2.5	< 0.013	0.013		5	9/12/2005
Dichlorotetrafluoroethane(F-114)	< 2.5	2.5	< 0.018	0.018		5	9/12/2005
Ethyl Acetate	< 2.5	2.5	< 0.0092	0.0092		5	9/12/2005
Ethylbenzene	2.9	2.5	0.013	0.011		5	9/12/2005
Heptane	< 2.5	2.5	< 0.010	0.010		5	9/12/2005
Hexachlorobutadiene	< 5.0	5.0	< 0.054	0.054		5	9/12/2005
Hexane	< 2.5	2.5	< 0.0089	0.0089		5	9/12/2005
m&p-Xylene	< 5.0	5.0	< 0.022	0.022		5	9/12/2005
Methyl tert-butyl ether	< 5.0	5.0	< 0.018	0.018		5	9/12/2005
Methylene chloride	< 2.5	2.5	< 0.0088	0.0088		5	9/12/2005
o-Xylene	< 2.5	2.5	< 0.011	0.011		5	9/12/2005
Propene (Propylene)	110	2.5	0.19	0.0044	D2	5	9/12/2005
Styrene	< 2.5	2.5	< 0.011	0.011		5	9/12/2005

Qualifiers:

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E - Value above quantitation range

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Aerotech Environmental

Date: *13-Sep-05*

CLIENT:	City of Tucson	**Client Sample ID:**	Toole-EFF-071305
Lab Order:	05090082	**Tag Number:**	01299
Project:	35 E Toole	**Collection Date:**	9/12/2005 10:11:00 AM
Lab ID:	05090082-01A	**Matrix:**	AIR

	ppbv		µg/L				
Analyses	**Result**	**Limit**	**Result**	**Limit**	**Qual**	**DF**	**Date Analyzed**
VOLATILE ORGANICS IN AIR		TO15					Analyst: JG
Tetrachloroethene	< 2.5	2.5	< 0.017	0.017		5	9/12/2005
Tetrahydrofuran	< 10	10	< 0.030	0.030		5	9/12/2005
Toluene	12	2.5	0.046	0.0096		5	9/12/2005
trans-1,2-Dichloroethene	< 2.5	2.5	< 0.010	0.010		5	9/12/2005
trans-1,3-Dichloropropene	< 2.5	2.5	< 0.012	0.012		5	9/12/2005
Trichloroethene	< 2.5	2.5	< 0.014	0.014		5	9/12/2005
Trichlorofluoromethane(F-11)	< 2.5	2.5	< 0.014	0.014		5	9/12/2005
Trichlorotrifluoroethane(F-113)	< 2.5	2.5	< 0.019	0.019		5	9/12/2005
Vinyl acetate	< 2.5	2.5	< 0.0089	0.0089		5	9/12/2005
Vinyl chloride	< 2.5	2.5	< 0.0065	0.0065		5	9/12/2005
Surr: 4-Bromofluorobenzene	100 %REC	70-130	-	-		5	9/12/2005

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
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Date: *13-Sep-05*

CLIENT: City of Tucson
Work Order: 05090082
Project: 35 E Toole

ANALYTICAL QC SUMMARY REPORT

TestCode: TO15

Sample ID: **MB-R64145** SampType: **MBLK** TestCode: **TO15** Units: **ppbv** Prep Date: RunNo: **64145**
Client ID: Batch ID: **R64145** TestNo: **TO15** Analysis Date: **9/12/2005** SeqNo: **764381**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1-Trichloroethane	< 0.50	0.50									
1,1,2,2-Tetrachloroethane	< 0.50	0.50									
1,1,2-Trichloroethane	< 0.50	0.50									
1,1-Dichloroethane	< 0.50	0.50									
1,1-Dichloroethene	< 0.50	0.50									
1,2,4-Trichlorobenzene	< 1.0	1.0									
1,2,4-Trimethylbenzene	< 0.50	0.50									
1,2-Dibromoethane	< 0.50	0.50									
1,2-Dichlorobenzene	< 0.50	0.50									
1,2-Dichloroethane	< 0.50	0.50									
1,2-Dichloropropane	< 0.50	0.50									
1,3,5-Trimethylbenzene	< 0.50	0.50									
1,3-Butadiene	< 0.50	0.50									
1,3-Dichlorobenzene	< 0.50	0.50									
1,4-Dichlorobenzene	< 0.50	0.50									
2,2,4-Trimethylpentane	< 0.50	0.50									
2-Butanone (MEK)	< 1.0	1.0									
2-Hexanone	< 1.0	1.0									
2-Propanol	< 1.0	1.0									
4-Ethyltoluene	< 0.50	0.50									
4-Methyl-2-pentanone	< 1.0	1.0									
Acetone	< 5.0	5.0									
Allyl chloride	< 0.50	0.50									
Benzene	< 0.50	0.50									
Benzyl chloride	< 2.0	2.0									
Bromodichloromethane	< 0.50	0.50									
Bromoethene(Vinyl Bromide)	< 0.50	0.50									
Bromoform	< 0.50	0.50									

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

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CLIENT: City of Tucson
Work Order: 05090082
Project: 35 E Toole

ANALYTICAL QC SUMMARY REPORT

TestCode: TO15

Sample ID: MB-R64145	SampType: MBLK	TestCode: TO15	Units: ppbv	Prep Date:	RunNo: 64145
Client ID:	Batch ID: R64145	TestNo: TO15		Analysis Date: 9/12/2005	SeqNo: 764381

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromomethane	< 0.50	0.50									
Carbon disulfide	< 0.50	0.50									
Carbon tetrachloride	< 0.50	0.50									
Chlorobenzene	< 0.50	0.50									
Chloroethane	< 0.50	0.50									
Chloroform	< 0.50	0.50									
Chloromethane	< 0.50	0.50									
cis-1,2-Dichloroethene	< 0.50	0.50									
cis-1,3-Dichloropropene	< 0.50	0.50									
Cyclohexane	< 0.50	0.50									
Dibromochloromethane	< 0.50	0.50									
Dichlorodifluoromethane(F-12)	< 0.50	0.50									
Dichlorotetrafluoroethane(F-114)	< 0.50	0.50									
Ethyl Acetate	< 0.50	0.50									
Ethylbenzene	< 0.50	0.50									
Heptane	< 0.50	0.50									
Hexachlorobutadiene	< 1.0	1.0									
Hexane	< 0.50	0.50									
m&p-Xylene	< 1.0	1.0									
Methyl tert-butyl ether	< 1.0	1.0									
Methylene chloride	< 0.50	0.50									
o-Xylene	< 0.50	0.50									
Propene (Propylene)	< 0.50	0.50									
Styrene	< 0.50	0.50									
Tetrachloroethene	< 0.50	0.50									
Tetrahydrofuran	< 2.0	2.0									
Toluene	< 0.50	0.50									
trans-1,2-Dichloroethene	< 0.50	0.50									
trans-1,3-Dichloropropene	< 0.50	0.50									

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

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CLIENT: City of Tucson
Work Order: 05090082
Project: 35 E Toole

ANALYTICAL QC SUMMARY REPORT

TestCode: TO15

Sample ID: **MB-R64145** SampType: **MBLK** TestCode: **TO15** Units: **ppbv** Prep Date: RunNo: **64145**
Client ID: Batch ID: **R64145** TestNo: **TO15** Analysis Date: **9/12/2005** SeqNo: **764381**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Trichloroethene	< 0.50	0.50									
Trichlorofluoromethane(F-11)	< 0.50	0.50									
Trichlorotrifluoroethane(F-113)	< 0.50	0.50									
Vinyl acetate	< 0.50	0.50									
Vinyl chloride	< 0.50	0.50									
Surr: 4-Bromofluorobenzene	9.580	0.50	10	0	95.8	70	130				

Sample ID: **LCS-R64145** SampType: **LCS** TestCode: **TO15** Units: **ppbv** Prep Date: RunNo: **64145**
Client ID: Batch ID: **R64145** TestNo: **TO15** Analysis Date: **9/12/2005** SeqNo: **764382**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1-Trichloroethane	9.090	0.50	10	0	90.9	65	135				
1,1,2,2-Tetrachloroethane	8.820	0.50	10	0	88.2	65	135				
1,1,2-Trichloroethane	9.130	0.50	10	0	91.3	65	135				
1,1-Dichloroethane	9.540	0.50	10	0	95.4	65	135				
1,1-Dichloroethene	10.01	0.50	10	0	100	65	135				
1,2,4-Trichlorobenzene	10.03	1.0	10	0	100	65	135				
1,2,4-Trimethylbenzene	10.53	0.50	10	0	105	65	135				
1,2-Dibromoethane	9.360	0.50	10	0	93.6	65	135				
1,2-Dichlorobenzene	9.620	0.50	10	0	96.2	65	135				
1,2-Dichloroethane	9.120	0.50	10	0	91.2	65	135				
1,2-Dichloropropane	9.460	0.50	10	0	94.6	65	135				
1,3,5-Trimethylbenzene	10.11	0.50	10	0	101	65	135				
1,3-Butadiene	9.170	0.50	10	0	91.7	65	135				
1,3-Dichlorobenzene	9.430	0.50	10	0	94.3	65	135				
1,4-Dichlorobenzene	9.490	0.50	10	0	94.9	65	135				
2,2,4-Trimethylpentane	10.09	0.50	10	0	101	65	135				
2-Butanone (MEK)	10.42	1.0	10	0	104	65	135				
2-Hexanone	10.37	1.0	10	0	104	65	135				

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

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CLIENT: City of Tucson
Work Order: 05090082
Project: 35 E Toole

ANALYTICAL QC SUMMARY REPORT

TestCode: TO15

Sample ID: **LCS-R64145** SampType: **LCS** TestCode: **TO15** Units: **ppbv** Prep Date: RunNo: **64145**
Client ID: Batch ID: **R64145** TestNo: **TO15** Analysis Date: **9/12/2005** SeqNo: **764382**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2-Propanol	9.300	1.0	10	0	93.0	65	135				
4-Ethyltoluene	10.37	0.50	10	0	104	65	135				
4-Methyl-2-pentanone	10.04	1.0	10	0	100	65	135				
Acetone	8.220	5.0	10	0	82.2	65	135				
Allyl chloride	11.36	0.50	10	0	114	65	135				
Benzene	10.80	0.50	10	0	108	65	135				
Benzyl chloride	10.21	2.0	10	0	102	65	135				
Bromodichloromethane	8.770	0.50	10	0	87.7	65	135				
Bromoethene(Vinyl Bromide)	8.900	0.50	10	0	89.0	65	135				
Bromoform	8.540	0.50	10	0	85.4	65	135				
Bromomethane	8.810	0.50	10	0	88.1	65	135				
Carbon disulfide	9.440	0.50	10	0	94.4	65	135				
Carbon tetrachloride	8.720	0.50	10	0	87.2	65	135				
Chlorobenzene	9.270	0.50	10	0	92.7	65	135				
Chloroethane	8.850	0.50	10	0	88.5	65	135				
Chloroform	8.820	0.50	10	0	88.2	65	135				
Chloromethane	8.690	0.50	10	0	86.9	65	135				
cis-1,2-Dichloroethene	10.68	0.50	10	0	107	65	135				
cis-1,3-Dichloropropene	10.89	0.50	10	0	109	65	135				
Cyclohexane	11.22	0.50	10	0	112	65	135				
Dibromochloromethane	8.820	0.50	10	0	88.2	65	135				
Dichlorodifluoromethane(F-12)	8.260	0.50	10	0	82.6	65	135				
Dichlorotetrafluoroethane(F-114)	8.820	0.50	10	0	88.2	65	135				
Ethyl Acetate	10.32	0.50	10	0	103	65	135				
Ethylbenzene	10.67	0.50	10	0	107	65	135				
Heptane	9.310	0.50	10	0	93.1	65	135				
Hexachlorobutadiene	8.760	1.0	10	0	87.6	65	135				
Hexane	11.71	0.50	10	0	117	65	135				
m&p-Xylene	20.87	1.0	20	0	104	65	135				

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

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CLIENT: City of Tucson
Work Order: 05090082
Project: 35 E Toole

ANALYTICAL QC SUMMARY REPORT

TestCode: TO15

Sample ID: **LCS-R64145** SampType: **LCS** TestCode: **TO15** Units: **ppbv** Prep Date: RunNo: **64145**
Client ID: Batch ID: **R64145** TestNo: **TO15** Analysis Date: **9/12/2005** SeqNo: **764382**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methyl tert-butyl ether	12.55	1.0	10	0	126	65	135				
Methylene chloride	8.580	0.50	10	0	85.8	65	135				
o-Xylene	9.680	0.50	10	0	96.8	65	135				
Propene (Propylene)	10.48	0.50	10	0	105	65	135				
Styrene	10.81	0.50	10	0	108	65	135				
Tetrachloroethene	9.680	0.50	10	0	96.8	65	135				
Tetrahydrofuran	11.13	2.0	10	0	111	65	135				
Toluene	10.71	0.50	10	0	107	65	135				
trans-1,2-Dichloroethene	10.72	0.50	10	0	107	65	135				
trans-1,3-Dichloropropene	10.61	0.50	10	0	106	65	135				
Trichloroethene	9.670	0.50	10	0	96.7	65	135				
Trichlorofluoromethane(F-11)	7.870	0.50	10	0	78.7	65	135				
Trichlorotrifluoroethane(F-113)	9.250	0.50	10	0	92.5	65	135				
Vinyl acetate	11.24	0.50	10	0	112	65	135				
Vinyl chloride	9.210	0.50	10	0	92.1	65	135				
Surr: 4-Bromofluorobenzene	9.780	0.50	10	0	97.8	70	130				

Sample ID: **LCSD-R64145** SampType: **LCSD** TestCode: **TO15** Units: **ppbv** Prep Date: RunNo: **64145**
Client ID: Batch ID: **R64145** TestNo: **TO15** Analysis Date: **9/12/2005** SeqNo: **764383**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1-Trichloroethane	9.370	0.50	10	0	93.7	65	135	9.090	3.03	25	
1,1,2,2-Tetrachloroethane	9.140	0.50	10	0	91.4	65	135	8.820	3.56	25	
1,1,2-Trichloroethane	9.390	0.50	10	0	93.9	65	135	9.130	2.81	25	
1,1-Dichloroethane	9.710	0.50	10	0	97.1	65	135	9.540	1.77	25	
1,1-Dichloroethene	10.20	0.50	10	0	102	65	135	10.01	1.88	25	
1,2,4-Trichlorobenzene	10.46	1.0	10	0	105	65	135	10.03	4.20	25	
1,2,4-Trimethylbenzene	10.91	0.50	10	0	109	65	135	10.53	3.54	25	
1,2-Dibromoethane	9.610	0.50	10	0	96.1	65	135	9.360	2.64	25	

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

■ Main Laboratory: 4645 E. Cotton Center Boulevard, Building 3, Suite 189 Phoenix, AZ 85040 Phone: 602.437.3340 Toll Free: 866.772.5227 Fax. 623.445.6192 www.aeroenvirolabs.com
■ Tucson Facility: 4455 S. Park Ave. Ste. 110 Tucson, AZ 85714 Phone: 520.807.3801 Fax: 520.807.3803
■ Corporate Address: 1501 W. Knudsen Drive, Phoenix, Arizona 85027 Phone: 623.780.4800 Toll Free: 800.651.4802

Aerotech Environmental Laboratories

a division of Aerotech Laboratories, Inc.

CLIENT: City of Tucson
Work Order: 05090082
Project: 35 E Toole

ANALYTICAL QC SUMMARY REPORT

TestCode: TO15

Sample ID: **LCSD-R64145** SampType: **LCSD** TestCode: **TO15** Units: **ppbv** Prep Date: RunNo: **64145**
Client ID: Batch ID: **R64145** TestNo: **TO15** Analysis Date: **9/12/2005** SeqNo: **764383**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2-Dichlorobenzene	9.970	0.50	10	0	99.7	65	135	9.620	3.57	25	
1,2-Dichloroethane	9.410	0.50	10	0	94.1	65	135	9.120	3.13	25	
1,2-Dichloropropane	9.610	0.50	10	0	96.1	65	135	9.460	1.57	25	
1,3,5-Trimethylbenzene	10.50	0.50	10	0	105	65	135	10.11	3.78	25	
1,3-Butadiene	9.320	0.50	10	0	93.2	65	135	9.170	1.62	25	
1,3-Dichlorobenzene	9.760	0.50	10	0	97.6	65	135	9.430	3.44	25	
1,4-Dichlorobenzene	9.840	0.50	10	0	98.4	65	135	9.490	3.62	25	
2,2,4-Trimethylpentane	10.17	0.50	10	0	102	65	135	10.09	0.790	25	
2-Butanone (MEK)	10.71	1.0	10	0	107	65	135	10.42	2.74	25	
2-Hexanone	10.64	1.0	10	0	106	65	135	10.37	2.57	25	
2-Propanol	9.630	1.0	10	0	96.3	65	135	9.300	3.49	25	
4-Ethyltoluene	10.75	0.50	10	0	108	65	135	10.37	3.60	25	
4-Methyl-2-pentanone	10.30	1.0	10	0	103	65	135	10.04	2.56	25	
Acetone	8.560	5.0	10	0	85.6	65	135	8.220	4.05	25	
Allyl chloride	11.41	0.50	10	0	114	65	135	11.36	0.439	25	
Benzene	10.87	0.50	10	0	109	65	135	10.80	0.646	25	
Benzyl chloride	10.75	2.0	10	0	108	65	135	10.21	5.15	25	
Bromodichloromethane	9.060	0.50	10	0	90.6	65	135	8.770	3.25	25	
Bromoethene(Vinyl Bromide)	9.310	0.50	10	0	93.1	65	135	8.900	4.50	25	
Bromoform	8.890	0.50	10	0	88.9	65	135	8.540	4.02	25	
Bromomethane	9.060	0.50	10	0	90.6	65	135	8.810	2.80	25	
Carbon disulfide	9.570	0.50	10	0	95.7	65	135	9.440	1.37	25	
Carbon tetrachloride	9.020	0.50	10	0	90.2	65	135	8.720	3.38	25	
Chlorobenzene	9.550	0.50	10	0	95.5	65	135	9.270	2.98	25	
Chloroethane	9.150	0.50	10	0	91.5	65	135	8.850	3.33	25	
Chloroform	9.120	0.50	10	0	91.2	65	135	8.820	3.34	25	
Chloromethane	8.820	0.50	10	0	88.2	65	135	8.690	1.48	25	
cis-1,2-Dichloroethene	10.92	0.50	10	0	109	65	135	10.68	2.22	25	
cis-1,3-Dichloropropene	11.14	0.50	10	0	111	65	135	10.89	2.27	25	

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

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Aerotech Environmental Laboratories

a division of Aerotech Laboratories, Inc.

CLIENT: City of Tucson
Work Order: 05090082
Project: 35 E Toole

ANALYTICAL QC SUMMARY REPORT

TestCode: TO15

Sample ID: **LCSD-R64145** SampType: **LCSD** TestCode: **TO15** Units: **ppbv** Prep Date: RunNo: **64145**
Client ID: Batch ID: **R64145** TestNo: **TO15** Analysis Date: **9/12/2005** SeqNo: **764383**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cyclohexane	11.36	0.50	10	0	114	65	135	11.22	1.24	25	
Dibromochloromethane	9.120	0.50	10	0	91.2	65	135	8.820	3.34	25	
Dichlorodifluoromethane(F-12)	8.350	0.50	10	0	83.5	65	135	8.260	1.08	25	
Dichlorotetrafluoroethane(F-114)	9.010	0.50	10	0	90.1	65	135	8.820	2.13	25	
Ethyl Acetate	10.78	0.50	10	0	108	65	135	10.32	4.36	25	
Ethylbenzene	10.97	0.50	10	0	110	65	135	10.67	2.77	25	
Heptane	9.490	0.50	10	0	94.9	65	135	9.310	1.91	25	
Hexachlorobutadiene	9.120	1.0	10	0	91.2	65	135	8.760	4.03	25	
Hexane	11.81	0.50	10	0	118	65	135	11.71	0.850	25	
m&p-Xylene	21.32	1.0	20	0	107	65	135	20.87	2.13	25	
Methyl tert-butyl ether	12.89	1.0	10	0	129	65	135	12.55	2.67	25	
Methylene chloride	8.770	0.50	10	0	87.7	65	135	8.580	2.19	25	
o-Xylene	9.970	0.50	10	0	99.7	65	135	9.680	2.95	25	
Propene (Propylene)	10.56	0.50	10	0	106	65	135	10.48	0.760	25	
Styrene	11.16	0.50	10	0	112	65	135	10.81	3.19	25	
Tetrachloroethene	9.970	0.50	10	0	99.7	65	135	9.680	2.95	25	
Tetrahydrofuran	11.56	2.0	10	0	116	65	135	11.13	3.79	25	
Toluene	10.89	0.50	10	0	109	65	135	10.71	1.67	25	
trans-1,2-Dichloroethene	10.86	0.50	10	0	109	65	135	10.72	1.30	25	
trans-1,3-Dichloropropene	10.88	0.50	10	0	109	65	135	10.61	2.51	25	
Trichloroethene	9.890	0.50	10	0	98.9	65	135	9.670	2.25	25	
Trichlorofluoromethane(F-11)	8.390	0.50	10	0	83.9	65	135	7.870	6.40	25	
Trichlorotrifluoroethane(F-113)	9.410	0.50	10	0	94.1	65	135	9.250	1.71	25	
Vinyl acetate	11.43	0.50	10	0	114	65	135	11.24	1.68	25	
Vinyl chloride	9.360	0.50	10	0	93.6	65	135	9.210	1.62	25	
Surr: 4-Bromofluorobenzene	9.900	0.50	10	0	99.0	70	130	9.780	0	0	

Qualifiers:
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- H Holding times for preparation or analysis exceeded
- R RPD outside accepted recovery limits
- J Analyte detected below quantitation limits
- S Spike Recovery outside accepted recovery limits

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TRANSWEST GEOCHEM

September 07, 2006

Alison Jones
City of Tucson, Environmental Services
100 N. Stone, 2nd Floor, W. Side
Tucson, AZ 85701

RE: Toole Ave

Work Order No.: 0608539

Dear Alison,

Transwest Geochem, Inc. received 2 samples on 8/31/06. The results of the analyses are presented in the following report.

The Case Narrative of this report addresses any Quality Control and/or Quality Assurance issues associated with this Work Order.

If you have any questions regarding these test results, please feel free to call us at (602) 437-0330.

Sincerely,

Matt Hill
Project Manager

ADHS License No. AZM133/AZ0133

3725 E. Atlanta Avenue • Phoenix, Arizona 85040 • (602) 437-0330 • (800) 927-5183 • Fax (602) 437-0660
3860 S. Palo Verde Rd. • Suite 301 • Tucson, Arizona 85714 • (520) 573-1061 • Fax (520) 573-1063

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Client: City of Tucson, Environmental Services
Work Order: 0608539
Project Name: Toole Ave
Project Number:

Date Printed: 07-Sep-06

Case Narrative

All method blanks, laboratory spikes, and/or matrix spikes met quality control objectives for the parameters associated with this Work Order except as detailed below or on the Data Qualifier page of this report. Data Qualifiers used in this report are in accordance with ADEQ Arizona Data Qualifiers, Revision 2.0 11/26/2003.

Data qualifiers ("flags") contained within this analytical report have been issued to explain a quality control deficiency, and do not affect the quality (validity) of the data unless noted otherwise in the case narrative.

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TRANSWEST GEOCHEM

Date Printed 06-Sep-06
License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Project Name: Toole Ave
Project Number:
Work Order: 0608539

Work Order Sample Summary

Client Sample ID	Lab Sample ID	Test Code	Collection Date	Date Received
Toole Ave-Influent	0608539-01A	8021B/8015B	8/31/06 08:50 AM	8/31/06 09:51 AM
Toole Ave-Effluent	0608539-02A	8021B/8015B	8/31/06 08:55 AM	8/31/06 09:51 AM

TRANSWEST GEOCHEM

Date Printed 06-Sep-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Project Name: Toole Ave
Project Number:
Work Order: 0608539
Date Received: 31-Aug-06

Definitions

Analytical Spike (AS)	The AS is a known amount of a target analyte added to a sample after it has been distilled, digested, or extracted and is ready for analysis. The AS is generally performed if the MS has failed. It is used to indicate interference that arises from sample distillation, digestion, or extraction as opposed to interference that is innate to the matrix.
Continuing Curve Verification (CCV)	The CCV is also referred to as a curve check. This is a standard analyzed at specified intervals during an analysis. The CCV verifies the stability and accuracy of the calibration curve. There are specific CCV recovery acceptance criteria for each method.
Dilution Factor (DF)	The DF is an indication of how much a sample had to be diluted in order to quantitate it on a standard curve. The DF is indicated in the reported sample result. The sample PQL increases as the dilution increases.
Internal Standard (IS)	The IS is a compound that is similar to the organic compound of interest in terms of chemical composition but is unique in that it is rare in the environment. The same concentration of IS is added to every sample for some organic methods.
Laboratory Control Sample (LCS)	The LCS is also referred to as a blank spike. The LCS is an addition of a known amount of a target analyte (from the same source as calibration standards or spikes) to an aliquot of deionized water or other appropriate clean matrix. The LCS is processed through the entire method procedure in the same manner as samples.
Matrix Spike (MS)	The MS is a known amount of a target analyte added to a sample. The MS is processed through the entire method procedure in the same manner as samples.
Method Blank (MB)	The MB is an aliquot of deionized water or other appropriate clean matrix that is thought to be free of the analyte in question. The MB is processed through the entire extraction or analysis procedure and is used to indicate contamination in the lab.
Method Detection Limit (MDL)	The MDL is the lowest level of detection of which a method is capable.
Practical Quantitation Limit (PQL)	The PQL is the lowest value at which Transwest Geochem can detect an analyte in matrix with a high degree of confidence. The PQL will increase as the DF increases. The PQL is greater than or equal to the MDL.
Relative Percent Difference (RPD)	The RPD is a measure of precision (the ability to obtain the same result on re-analysis of the same sample). It is calculated using the result of a sample, MS, LCS, or LCSV and its associated duplicate result.
Secondary Source QC Sample (LCSV)	The LCSV is also referred to as a second source laboratory control sample. It is the same type of standard as a calibration or spiking standard but is obtained from a different source. The LCSV is an indication of the primary standard quality, method performance, and instrument performance.
Surrogate	A surrogate compound is similar to the organic compound of interest in terms of chemical composition but is unique in that it is rare in the environment. When surrogates are used, they are added to every sample, blank and standard. Surrogate recovery is used as an indication of extraction and/or analytical success.
Trip Blank (TB)	The TB is a portion of deionized water preserved in the same manner as the samples. The TB travels from the lab, to the field, and then back to the lab with the samples from the field. The TB serves as an indication of contamination introduced during sample transportation.

CLIENT: City of Tucson, Environmental Services
Project Name: Toole Ave
Project Number:
Work Order: 0608539
Date Received: 31-Aug-06

References

Transwest Geochem, Inc. uses the methods outlined in the following references:

Code of Federal Regulations, 40CFR, Part 136, Appendix A, 1998.

Standard Methods for the Examination of Water and Wastewater, 19th Edition, 1995.

Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Revised March 1983.

Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, Revised August 1993.

Methods for the Determination of Metals in Environmental Samples, Supplement 1: EPA/600/R-94/111, Revised May 1994.

Methods for the Determination of Organic Compounds in Drinking Water, EPA/600/4-88/039, Revised July, 1991; EPA-600/4-90/020, Supplement I, July 1990; EPA-600/R-92/129; Supplement II, August 1992; EPA-600/R-95/131, Supplement III, August 1995.

Hach, Water Analysis Handbook, 3rd Edition, 1997.

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition, 1986 including Update I, July 1992; Update IIA, August 1993; Update II; September 1994; Update IIB, January 1995; Update III, December 1996

Bureau of Laboratory Services, State of Arizona Department of Health Services Method 418.1AZ: TPH in Soil, September 1994.

Bureau of Laboratory Services, State of Arizona Department of Health Services Method 8015AZ.R1, September 1998. (Comment: C6-C10 GRO reported by this method is not to be used in compliance situations)

ASTM MethodD4982, Annual Book of ASTM Standards, Volumes 11.01 and 11.02, 1995

The Determination of Polychlorinated Biphenyls in Transformer Fluid and Waste Oils, EPA-600 4-81-045, September 1982.

TRANSWEST GEOCHEM

Date Printed 06-Sep-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0608539
Lab ID: 0608539-01
Project Name: Toole Ave
Project Number:

Client Sample ID: Toole Ave-Influent
Collection Date: 8/31/2006 8:50:00 AM
Matrix: Soil Vapor

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene	**10**	0.50		mg/m³	1.0	8021B/8015B	8/31/06	8/31/06	SS	6GC14060711
Benzene-ppmv	**3.23**	0.16		ppmv	1.00	8021B/8015B	8/31/06	8/31/06	SS	6GC14060711B
Toluene	**19**	1.0		mg/m³	1.0	8021B/8015B	8/31/06	8/31/06	SS	6GC14060711
Toluene-ppmv	**4.97**	0.27		ppmv	1.00	8021B/8015B	8/31/06	8/31/06	SS	6GC14060711B
Ethylbenzene	**13**	1.0		mg/m³	1.0	8021B/8015B	8/31/06	8/31/06	SS	6GC14060711
Ethylbenzene-ppmv	**3.09**	0.23		ppmv	1.00	8021B/8015B	8/31/06	8/31/06	SS	6GC14060711B
Xylenes, total	**57**	1.5		mg/m³	1.0	8021B/8015B	8/31/06	8/31/06	SS	6GC14060711
Xylenes, total-ppmv	**13.26**	0.35		ppmv	1.00	8021B/8015B	8/31/06	8/31/06	SS	6GC14060711B
TVFHC (C6-C10)	**1200**	100		mg/m³	1.0	8021B/8015B	8/31/06	8/31/06	SS	6GC14060711
TVFHC (C6-C10)-ppmv	**299.19**	24.00		ppmv	1.00	8021B/8015B	8/31/06	8/31/06	SS	6GC14060711B
Bromofluorobenzene(Surrogate)	111	70-130		%REC	1.0	8021B/8015B	8/31/06	8/31/06	SS	6GC14060711

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TRANSWEST GEOCHEM

Date Printed 06-Sep-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0608539
Lab ID: 0608539-02
Project Name: Toole Ave
Project Number:

Client Sample ID: Toole Ave-Effluent
Collection Date: 8/31/2006 8:55:00 AM
Matrix: Soil Vapor

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene	<0.50	0.50		mg/m³	1.0	8021B/8015B	8/31/06	8/31/06	SS	6GC14060711
Benzene-ppmv	<0.16	0.16		ppmv	1.00	8021B/8015B	8/31/06	8/31/06	SS	6GC14060711B
Toluene	<1.0	1.0		mg/m³	1.0	8021B/8015B	8/31/06	8/31/06	SS	6GC14060711
Toluene-ppmv	<0.27	0.27		ppmv	1.00	8021B/8015B	8/31/06	8/31/06	SS	6GC14060711B
Ethylbenzene	<1.0	1.0		mg/m³	1.0	8021B/8015B	8/31/06	8/31/06	SS	6GC14060711
Ethylbenzene-ppmv	<0.23	0.23		ppmv	1.00	8021B/8015B	8/31/06	8/31/06	SS	6GC14060711B
Xylenes, total	**2.7**	1.5		mg/m³	1.0	8021B/8015B	8/31/06	8/31/06	SS	6GC14060711
Xylenes, total-ppmv	**0.63**	0.35		ppmv	1.00	8021B/8015B	8/31/06	8/31/06	SS	6GC14060711B
TVFHC (C6-C10)	<100	100		mg/m³	1.0	8021B/8015B	8/31/06	8/31/06	SS	6GC14060711
TVFHC (C6-C10)-ppmv	<24.00	24.00		ppmv	1.00	8021B/8015B	8/31/06	8/31/06	SS	6GC14060711B
Bromofluorobenzene(Surrogate)	88	70-130		%REC	1.0	8021B/8015B	8/31/06	8/31/06	SS	6GC14060711

Confidential and Privileged

Date: 06-Sep-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0608539
Project: Toole Ave

QC SUMMARY REPORT

Method Blank

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene-ppmv	<0.16	0.16		ppmv	1	8021B/8015B	8/31/06	8/31/06	SS	6GC14060711B
Toluene-ppmv	<0.27	0.27		ppmv	1	8021B/8015B	8/31/06	8/31/06	SS	6GC14060711B
Ethylbenzene-ppmv	<0.23	0.23		ppmv	1	8021B/8015B	8/31/06	8/31/06	SS	6GC14060711B
Xylenes, total-ppmv	<0.35	0.35		ppmv	1	8021B/8015B	8/31/06	8/31/06	SS	6GC14060711B
TVFHC (C6-C10)-ppmv	<24.00	24.00		ppmv	1	8021B/8015B	8/31/06	8/31/06	SS	6GC14060711B
Benzene	<0.50	0.50		mg/m³	1	8021B/8015B	8/31/06	8/31/06	SS	6GC14060711
Toluene	<1.0	1.0		mg/m³	1	8021B/8015B	8/31/06	8/31/06	SS	6GC14060711
Ethylbenzene	<1.0	1.0		mg/m³	1	8021B/8015B	8/31/06	8/31/06	SS	6GC14060711
Xylenes, total	<1.5	1.5		mg/m³	1	8021B/8015B	8/31/06	8/31/06	SS	6GC14060711
TVFHC (C6-C10)	<100	100		mg/m³	1	8021B/8015B	8/31/06	8/31/06	SS	6GC14060711
Bromofluorobenzene	89	70-130		%REC	1	8021B/8015B	8/31/06	8/31/06	SS	6GC14060711

TRANSWEST GEOCHEM

Date: 06-Sep-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0608539
Project: Toole Ave

QC SUMMARY REPORT

Sample Duplicate

Analyte	Result	PQL	Units	RPD Ref Val	% RPD	RPD Limit	Test Code	Date Prepared	Date Analyzed	Analyst	Qual
Sample ID: **0608539-01AD**		Batch ID: 6GC14060711									
Client ID: **Toole Ave-Influent**											
Benzene	10.60	0.50	mg/m³	10.30	3%	30	8021B/8015B	8/31/06	8/31/06	SS	
Toluene	18.50	1.0	mg/m³	18.70	1%	30	8021B/8015B	8/31/06	8/31/06	SS	
Ethylbenzene	13.00	1.0	mg/m³	13.40	3%	30	8021B/8015B	8/31/06	8/31/06	SS	
Xylenes, total	55.15	1.5	mg/m³	57.47	4%	30	8021B/8015B	8/31/06	8/31/06	SS	
TVFHC (C6-C10)	1196	100	mg/m³	1224	2%	30	8021B/8015B	8/31/06	8/31/06	SS	

TRANSWEST GEOCHEM

Date: 06-Sep-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0608539
Project: Toole Ave

QC SUMMARY REPORT

Blank Spike

Analyte	Result	PQL	SPK value	SPK Ref Val	% Rec	Low Limit	High Limit	RPD Ref Val	% RPD	RPD Limit	Qual
Sample ID: **LCS 8/31**	Batch ID: 6GC14060711			Test Code: 8021B/8015B				Date Analyzed: 08/31/06 00:00			
				Units: mg/m³				Date Prepared: 8/31/06			
Benzene	4.200	0.50	5.000		84%	70	130				
Toluene	4.500	1.0	5.000		90%	70	130				
Ethylbenzene	4.300	1.0	5.000		86%	70	130				
Xylenes, total	13.475	1.5	15.00		90%	70	130				
TVFHC (C6-C10)	184.5	100	250.0		74%	70	130				
Bromofluorobenzene	9.400	0.50	10.00		94%	70	130				

TRANSWEST GEOCHEM

Sample Receipt Checklist

Client Name: City of Tucson-E.S.

Date and Time Received: 8/31/06 09:51

Work Order Number: 0608539

Received by: Keith Konola

Checklist completed by: Keith K. 8/31/06
Signature / Date

Logged In by: _____
Initials / Date

Matrix: Air

Carrier Name: Verdad

Reviewed by: _____
Initials / Date

				COMMENTS
Shipping container/cooler in good condition?	Yes ☐	No ☐	Not Present ☑	
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑	
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐	N/A ☐	
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	Temp: 25.2°C → Tedlar Bags	
Water – VOA vials have zero headspace?	Yes ☐	No ☐	N/A ☑	
Water – pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	
Water – Sulfides present in Cyanide samples?	Yes ☐	No ☐	N/A ☑	

Adjusted ? _____ Checked by: _____

Client contacted: _____ Date contacted: _____ Person contacted: _____

Contacted by: _____ Regarding: _____

Corrective Action: _____

TRANSWEST GEOCHEM

Sample Receipt Checklist

Client Name: City of Tucson

Date and Time Received: 8/31/06 1100

Work Order Number: 0608539

Checked by: lm

Checklist completed by: Leslie May 8/31/06
Signature / Date

Logged In by: DA 8/31/06
Initials / Date

Matrix: Air Carrier Name: Client TGI Express It

Reviewed by: MMB 8/5/06
Initials / Date

				COMMENTS
Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑	
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Container/Temp Blank temperature in compliance?	Yes ☐	No ☐	Temp: Amb	Sampled < 2hrs ☐
Water – VOA vials have zero headspace?	Yes ☐	No ☐	N/A ☑	
Water – pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	Checked by: _____
Water – Sulfides present in Cyanide samples?	Yes ☐	No ☐	N/A ☑	
Sample considered Drinking Water for metal analysis?	Yes ☐	No ☐	N/A ☑	

Client contacted: _____ Date contacted: _____ Person contacted: _____

Contacted by: _____ Regarding: _____

Corrective Action: _____

TRANSWEST GEOCHEM

3725 E. Atlanta Ave.
Phoenix, Arizona 85040
Phone: (602) 437-0330
Fax: (602) 437-0660

3860 S. Palo Verde Rd., Ste. 301
Tucson, Arizona 85714
Phone: (520) 573-1061
Fax: (520) 573-1063

Chain of Custody

TGI Work Order No: 0608539

Date 8/31/06 Page 1 of 1

Project Manager:	Molly Collins
Client Name:	City of Tucson ES
Address:	
City, State, Zip:	
Phone:	Fax:

Bill To:	COT ES
Company:	
Address:	
City, State, Zip:	
Phone:	Fax:

P.O. No.:	
Project Name:	Toole Ave
Project Number:	

SAMPLE RECEIPT

Temperature:	25.2°C	Ice:	
Received Intact:	(Yes) No N/A	Absent / Present	
Custody Seals:	Yes (No) N/A	Wet / Blue	
Total No. of Containers:	2	Sampled <2 hrs ago	

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled 2006	Time Sampled	Lab ID	No. of Containers	TPH, (8015AZR.1)	BTEX (8021B)	Volatile Organics GCMS (624/8260B)	SDWA Volatiles, (524.2)	Semi-Volatile Organics GCMS (625/8270)	Organochlorine Pesticides (608/8081)	PCB's, (8082)	PAH, EPA (8310)	8 RCRA Metals	Comments
Toole Ave-Influent	VA	8/31	0950	01	1	X	X								
Toole Ave-Effluent	VA	8/31	0955	02	1	X	X								

	Relinquished by: (Signature)	(Print Name)	Received by: (Signature)	(Print Name)	Date / Time
1	Matt Wallace	Matt Wallace	Keith Konola	Keith Konola	8/31/06 09:51
2	Keith Konola	Keith Konola		Express It	8/31/06 11:00
3		Express It	Leslie May - TGI	Leslie May	8/31/06 1440

White copy to TGI, Yellow copy for final report, Pink copy to sampler

Revised: 3/6/06

TRANSWEST GEOCHEM

August 22, 2006

Molly Collins
City of Tucson, Environmental Services
100 N. Stone, 2nd Floor, W. Side
Tucson, AZ 85701

RE: Toole

Work Order No.: 0608090

Dear Molly,

Transwest Geochem, Inc. received 3 samples on 8/07/06. The results of the analyses are presented in the following report.

The Case Narrative of this report addresses any Quality Control and/or Quality Assurance issues associated with this Work Order.

If you have any questions regarding these test results, please feel free to call us at (602) 437-0330.

Sincerely,

Matt Hill
Project Manager

ADHS License No. AZM133/AZ0133

3725 E. Atlanta Avenue • Phoenix, Arizona 85040 • (602) 437-0330 • (800) 927-5183 • Fax (602) 437-0660
3860 S. Palo Verde Rd. • Suite 301 • Tucson, Ariz

Client: City of Tucson, Environmental Services
Work Order: 0608090
Project Name: Toole
Project Number:

Date Printed: 22-Aug-06

Case Narrative

All method blanks, laboratory spikes, and/or matrix spikes met quality control objectives for the parameters associated with this Work Order except as detailed below or on the Data Qualifier page of this report. Data Qualifiers used in this report are in accordance with ADEQ Arizona Data Qualifiers, Revision 2.0 11/26/2003.

Data qualifiers ("flags") contained within this analytical report have been issued to explain a quality control deficiency, and do not affect the quality (validity) of the data unless noted otherwise in the case narrative.

The samples were received at a temperature outside of the 2-6 degrees C range required for compliance, and more than 2 hours after sampling.

Analytical Comments for Method 8021B/8015B, Samples 0608090-02 and -03, Batch 5GC9060809: The surrogate recovered above laboratory acceptance limits due to non target analytes in the sample matrix.

3725 E. Atlanta Avenue • Phoenix, Arizona 85040 • (602) 437-0330 • (800) 927-5183 • Fax (602) 437-0660
3860 S. Palo Verde Rd. • Suite 301 • Tucson, Arizona 85714 • (520) 573-1061 • Fax (520) 573-1063

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TRANSWEST GEOCHEM

Date Printed 21-Aug-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Project Name: Toole
Project Number:
Work Order: 0608090
Date Received: 07-Aug-06

Case Narrative
Data Qualifiers

One or more of the following data qualifiers may be associated with your analytical and/or quality control data.

D1	Sample required dilution due to matrix.
D2	Sample required dilution due to high concentration of target analyte.
S10	Surrogate recovery was above laboratory and method acceptance limits. See Case Narrative.

TRANSWEST GEOCHEM

Date Printed 21-Aug-06
License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Project Name: Toole
Project Number:
Work Order: 0608090

Work Order Sample Summary

Client Sample ID	Lab Sample ID	Test Code	Collection Date	Date Received
Toole-080706-P1	0608090-01A	8021B/8015B	8/07/06 07:10 AM	8/07/06 10:35 AM
Toole-080706-P2	0608090-02A	8021B/8015B	8/07/06 07:15 AM	8/07/06 10:35 AM
Toole-080706-P3	0608090-03A	8021B/8015B	8/07/06 07:20 AM	8/07/06 10:35 AM

TRANSWEST GEOCHEM

Date Printed 21-Aug-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Project Name: Toole
Project Number:
Work Order: 0608090
Date Received: 07-Aug-06

Definitions

Analytical Spike (AS)	The AS is a known amount of a target analyte added to a sample after it has been distilled, digested, or extracted and is ready for analysis. The AS is generally performed if the MS has failed. It is used to indicate interference that arises from sample distillation, digestion, or extraction as opposed to interference that is innate to the matrix.
Continuing Curve Verification (CCV)	The CCV is also referred to as a curve check. This is a standard analyzed at specified intervals during an analysis. The CCV verifies the stability and accuracy of the calibration curve. There are specific CCV recovery acceptance criteria for each method.
Dilution Factor (DF)	The DF is an indication of how much a sample had to be diluted in order to quantitate it on a standard curve. The DF is indicated in the reported sample result. The sample PQL increases as the dilution increases.
Internal Standard (IS)	The IS is a compound that is similar to the organic compound of interest in terms of chemical composition but is unique in that it is rare in the environment. The same concentration of IS is added to every sample for some organic methods.
Laboratory Control Sample (LCS)	The LCS is also referred to as a blank spike. The LCS is an addition of a known amount of a target analyte (from the same source as calibration standards or spikes) to an aliquot of deionized water or other appropriate clean matrix. The LCS is processed through the entire method procedure in the same manner as samples.
Matrix Spike (MS)	The MS is a known amount of a target analyte added to a sample. The MS is processed through the entire method procedure in the same manner as samples.
Method Blank (MB)	The MB is an aliquot of deionized water or other appropriate clean matrix that is thought to be free of the analyte in question. The MB is processed through the entire extraction or analysis procedure and is used to indicate contamination in the lab.
Method Detection Limit (MDL)	The MDL is the lowest level of detection of which a method is capable.
Practical Quantitation Limit (PQL)	The PQL is the lowest value at which Transwest Geochem can detect an analyte in matrix with a high degree of confidence. The PQL will increase as the DF increases. The PQL is greater than or equal to the MDL.
Relative Percent Difference (RPD)	The RPD is a measure of precision (the ability to obtain the same result on re-analysis of the same sample). It is calculated using the result of a sample, MS, LCS, or LCSV and its associated duplicate result.
Secondary Source QC Sample (LCSV)	The LCSV is also referred to as a second source laboratory control sample. It is the same type of standard as a calibration or spiking standard but is obtained from a different source. The LCSV is an indication of the primary standard quality, method performance, and instrument performance.
Surrogate	A surrogate compound is similar to the organic compound of interest in terms of chemical composition but is unique in that it is rare in the environment. When surrogates are used, they are added to every sample, blank and standard. Surrogate recovery is used as an indication of extraction and/or analytical success.
Trip Blank (TB)	The TB is a portion of deionized water preserved in the same manner as the samples. The TB travels from the lab, to the field, and then back to the lab with the samples from the field. The TB serves as an indication of contamination introduced during sample transportation.

TRANSWEST GEOCHEM

Date Printed 21-Aug-06
License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Project Name: Toole
Project Number:
Work Order: 0608090
Date Received: 07-Aug-06

References

Transwest Geochem, Inc. uses the methods outlined in the following references:

Code of Federal Regulations, 40CFR, Part 136, Appendix A, 1998.

Standard Methods for the Examination of Water and Wastewater, 19th Edition, 1995.

Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Revised March 1983.

Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, Revised August 1993.

Methods for the Determination of Metals in Environmental Samples, Supplement 1: EPA/600/R-94/111, Revised May 1994.

Methods for the Determination of Organic Compounds in Drinking Water, EPA/600/4-88/039, Revised July, 1991; EPA-600/4-90/020, Supplement I, July 1990; EPA-600/R-92/129; Supplement II, August 1992; EPA-600/R-95/131, Supplement III, August 1995.

Hach, Water Analysis Handbook, 3rd Edition, 1997.

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition, 1986 including Update I, July 1992; Update IIA, August 1993; Update II; September 1994; Update IIB, January 1995; Update III, December 1996

Bureau of Laboratory Services, State of Arizona Department of Health Services Method 418.1AZ: TPH in Soil, September 1994.

Bureau of Laboratory Services, State of Arizona Department of Health Services Method 8015AZ.R1, September 1998. (Comment: C6-C10 GRO reported by this method is not to be used in compliance situations)

ASTM MethodD4982, Annual Book of ASTM Standards, Volumes 11.01 and 11.02, 1995

The Determination of Polychlorinated Biphenyls in Transformer Fluid and Waste Oils, EPA-600 4-81-045, September 1982.

TRANSWEST GEOCHEM

Date Printed 21-Aug-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0608090
Lab ID: 0608090-01
Project Name: Toole
Project Number:

Client Sample ID: Toole-080706-P1
Collection Date: 8/7/2006 7:10:00 AM
Matrix: Air

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene	**18**	0.50		mg/m³	1.0	8021B/8015B	N/A	8/9/06	JPM	5GC9060809
Benzene-ppmv	**5.49**	0.16		ppmv	1.00	8021B/8015B	N/A	8/9/06	JPM	5GC9060809B
Toluene	**14**	1.0		mg/m³	1.0	8021B/8015B	N/A	8/9/06	JPM	5GC9060809
Toluene-ppmv	**3.72**	0.27		ppmv	1.00	8021B/8015B	N/A	8/9/06	JPM	5GC9060809B
Ethylbenzene	**8.9**	1.0		mg/m³	1.0	8021B/8015B	N/A	8/9/06	JPM	5GC9060809
Ethylbenzene-ppmv	**2.05**	0.23		ppmv	1.00	8021B/8015B	N/A	8/9/06	JPM	5GC9060809B
Xylenes, total	**38**	1.5		mg/m³	1.0	8021B/8015B	N/A	8/9/06	JPM	5GC9060809
Xylenes, total-ppmv	**8.82**	0.35		ppmv	1.00	8021B/8015B	N/A	8/9/06	JPM	5GC9060809B
TVFHC (C6-C10)	**1200**	500	D1	mg/m³	5.0	8021B/8015B	N/A	8/9/06	JPM	5GC9060809
TVFHC (C6-C10)-ppmv	**303.91**	120.00	D1	ppmv	5.00	8021B/8015B	N/A	8/9/06	JPM	5GC9060809B
Bromofluorobenzene(Surrogate)	130	70-130		%REC	1.0	8021B/8015B	N/A	8/9/06	JPM	5GC9060809

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TRANSWEST GEOCHEM

Date Printed 21-Aug-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0608090
Lab ID: 0608090-02
Project Name: Toole
Project Number:

Client Sample ID: Toole-080706-P2
Collection Date: 8/7/2006 7:15:00 AM
Matrix: Air

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene	**15**	0.50		mg/m³	1.0	8021B/8015B	N/A	8/9/06	JPM	5GC9060809
Benzene-ppmv	**4.64**	0.16		ppmv	1.00	8021B/8015B	N/A	8/9/06	JPM	5GC9060809B
Toluene	<1.0	1.0		mg/m³	1.0	8021B/8015B	N/A	8/9/06	JPM	5GC9060809
Toluene-ppmv	**3.93**	0.27		ppmv	1.00	8021B/8015B	N/A	8/9/06	JPM	5GC9060809B
Ethylbenzene	**15**	1.0		mg/m³	1.0	8021B/8015B	N/A	8/9/06	JPM	5GC9060809
Ethylbenzene-ppmv	<0.23	0.23		ppmv	1.00	8021B/8015B	N/A	8/9/06	JPM	5GC9060809B
Xylenes, total	**33**	1.5		mg/m³	1.0	8021B/8015B	N/A	8/9/06	JPM	5GC9060809
Xylenes, total-ppmv	**7.52**	0.35		ppmv	1.00	8021B/8015B	N/A	8/9/06	JPM	5GC9060809B
TVFHC (C6-C10)	**2900**	500	D2	mg/m³	5.0	8021B/8015B	N/A	8/9/06	JPM	5GC9060809
TVFHC (C6-C10)-ppmv	**711.62**	120.00	D2	ppmv	5.00	8021B/8015B	N/A	8/9/06	JPM	5GC9060809B
Bromofluorobenzene(Surrogate)	151	70-130	S10	%REC	1.0	8021B/8015B	N/A	8/9/06	JPM	5GC9060809

TRANSWEST GEOCHEM

Date Printed 21-Aug-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0608090
Lab ID: 0608090-03
Project Name: Toole
Project Number:

Client Sample ID: Toole-080706-P3
Collection Date: 8/7/2006 7:20:00 AM
Matrix: Air

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene	**4.8**	0.50		mg/m³	1.0	8021B/8015B	N/A	8/9/06	JPM	5GC9060809
Benzene-ppmv	**1.50**	0.16		ppmv	1.00	8021B/8015B	N/A	8/9/06	JPM	5GC9060809B
Toluene	**9.1**	1.0		mg/m³	1.0	8021B/8015B	N/A	8/9/06	JPM	5GC9060809
Toluene-ppmv	**2.42**	0.27		ppmv	1.00	8021B/8015B	N/A	8/9/06	JPM	5GC9060809B
Ethylbenzene	**12**	1.0		mg/m³	1.0	8021B/8015B	N/A	8/9/06	JPM	5GC9060809
Ethylbenzene-ppmv	**2.79**	0.23		ppmv	1.00	8021B/8015B	N/A	8/9/06	JPM	5GC9060809B
Xylenes, total	**59**	1.5		mg/m³	1.0	8021B/8015B	N/A	8/9/06	JPM	5GC9060809
Xylenes, total-ppmv	**13.51**	0.35		ppmv	1.00	8021B/8015B	N/A	8/9/06	JPM	5GC9060809B
TVFHC (C6-C10)	**1800**	500	D2	mg/m³	5.0	8021B/8015B	N/A	8/9/06	JPM	5GC9060809
TVFHC (C6-C10)-ppmv	**444.75**	120.00	D2	ppmv	5.00	8021B/8015B	N/A	8/9/06	JPM	5GC9060809B
Bromofluorobenzene(Surrogate)	140	70-130	S10	%REC	1.0	8021B/8015B	N/A	8/9/06	JPM	5GC9060809

TRANSWEST GEOCHEM

Date: 21-Aug-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0608090
Project: Toole

QC SUMMARY REPORT

Method Blank

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene-ppmv	<0.16	0.16		ppmv	1	8021B/8015B	N/A	8/9/06	JPM	5GC9060809B
Toluene-ppmv	<0.27	0.27		ppmv	1	8021B/8015B	N/A	8/9/06	JPM	5GC9060809B
Ethylbenzene-ppmv	<0.23	0.23		ppmv	1	8021B/8015B	N/A	8/9/06	JPM	5GC9060809B
Xylenes, total-ppmv	<0.35	0.35		ppmv	1	8021B/8015B	N/A	8/9/06	JPM	5GC9060809B
TVFHC (C6-C10)-ppmv	<24.00	24.00		ppmv	1	8021B/8015B	N/A	8/9/06	JPM	5GC9060809B
Benzene	<0.50	0.50		mg/m³	1	8021B/8015B	N/A	8/9/06	JPM	5GC9060809
Toluene	<1.0	1.0		mg/m³	1	8021B/8015B	N/A	8/9/06	JPM	5GC9060809
Ethylbenzene	<1.0	1.0		mg/m³	1	8021B/8015B	N/A	8/9/06	JPM	5GC9060809
Xylenes, total	<1.5	1.5		mg/m³	1	8021B/8015B	N/A	8/9/06	JPM	5GC9060809
TVFHC (C6-C10)	<100	100		mg/m³	1	8021B/8015B	N/A	8/9/06	JPM	5GC9060809
Bromofluorobenzene	107	70-130		%REC	1	8021B/8015B	N/A	8/9/06	JPM	5GC9060809

TRANSWEST GEOCHEM

Date: 21-Aug-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0608090
Project: Toole

QC SUMMARY REPORT

Sample Duplicate

Analyte	Result	PQL	Units	RPD Ref Val	% RPD	RPD Limit	Test Code	Date Prepared	Date Analyzed	Analyst	Qual
Sample ID: **0608090-01AD**		Batch ID: 5GC9060809									
Client ID: **Toole-080706-P1**											
Benzene	18.30	0.50	mg/m³	17.50	4%	30	8021B/8015B	N/A	8/9/06	JPM	
Toluene	14.70	1.0	mg/m³	14.00	5%	30	8021B/8015B	N/A	8/9/06	JPM	
Ethylbenzene	9.800	1.0	mg/m³	8.900	10%	30	8021B/8015B	N/A	8/9/06	JPM	
Xylenes, total	41.97	1.5	mg/m³	38.25	9%	30	8021B/8015B	N/A	8/9/06	JPM	
TVFHC (C6-C10)	1074	500	mg/m³	1243	15%	30	8021B/8015B	N/A	8/9/06	JPM	

TRANSWEST GEOCHEM

Date: 21-Aug-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0608090
Project: Toole

QC SUMMARY REPORT

Blank Spike

Analyte	Result	PQL	SPK value	SPK Ref Val	% Rec	Low Limit	High Limit	RPD Ref Val	% RPD	RPD Limit	Qual
Sample ID: **LCS 8/9**	Batch ID: 5GC9060809			Test Code: 8021B/8015B				Date Analyzed: 08/09/06 00:00			
				Units mg/m³				Date Prepared: N/A			
Benzene	5.300	0.50	5.000		106%	70	130				
Toluene	5.200	1.0	5.000		104%	70	130				
Ethylbenzene	5.300	1.0	5.000		106%	70	130				
Xylenes, total	16.66	1.5	15.00		111%	70	130				
TVFHC (C6-C10)	312.1	100	250.0		125%	70	130				
Bromofluorobenzene	10.80	0.50	10.00		108%	70	130				

TRANSWEST GEOCHEM

3725 E. Atlanta Ave.
Phoenix, Arizona 85040
Phone: (602) 437-0330
Fax: (602) 437-0660

3860 S. Palo Verde Rd., Ste. 301
Tucson, Arizona 85714
Phone: (520) 573-1061
Fax: (520) 573-1063

Chain of Custody

TGI Work Order No: 0608090

Date 8/7/06 Page 1 of 1

Project Manager:	Molly Collins
Client Name:	COT ENV SVCS
Address:	
City, State, Zip:	
Phone:	791 5414 Fax: 791-5417

Bill To:	COT ENV SVC
Company:	
Address:	
City, State, Zip:	
Phone:	Fax:

P.O. No.:	
Project Name:	Toole
Project Number:	

SAMPLE RECEIPT

Temperature:	25.4°C	Ice:	
Received Intact:	Yes No N/A	Absent / Present	
Custody Seals:	Yes No N/A	Wet / Blue	
Total No. of Containers:	3	Sampled <2 hrs ago	

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Lab ID	No. of Containers	TPH, (8015AZR.1)	BTEX (8021B)	Volatile Organics GCMS (624/8260B)	SDWA Volatiles, (524.2)	Semi-Volatile Organics GCMS (625/8270)	Organochlorine Pesticides (608/8081)	PCB's, (8082)	PAH, EPA (8310)	8 RCRA Metals	Comments
Toole-080706-P1	AIR	8/07/06	0110	01	1	X	X								
Toole-080706-P2	AIR	8/07/06	0115	02	1	X	X								
Toole-080706-P3	AIR	8/07/06	0120	03	1	X	X								

	Relinquished by: (Signature)	(Print Name)	Received by: (Signature)	(Print Name)	Date / Time
1	[illegible]	[illegible]	Terri Collins	Terri Collins	8/7/06 10:35
2	Terri Collins	Terri Collins		Express It	8/7/06 15:00
3		Express It	Leslie May	Leslie May	8/8/06 0919

White copy to TGI, Yellow copy for final report, Pink copy to sampler

Revised: 3/6/06

TRANSWEST GEOCHEM

Sample Receipt Checklist

Client Name: COT - ES

Date and Time Received: 8/7/06 10:35

Work Order Number: 0608090

Received by: Kerri Collins

Checklist completed by: Kerri Collins 8/7/06
Signature / Date

Logged In by: _____
Initials / Date

Matrix: Air

Carrier Name: Client

Reviewed by: _____
Initials / Date

				COMMENTS
Shipping container/cooler in good condition?	Yes ☐	No ☐	Not Present ☒	
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☒	
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☒	
Chain of custody present?	Yes ☒	No ☐		
Chain of custody signed when relinquished and received?	Yes ☒	No ☐		
Chain of custody agrees with sample labels?	Yes ☒	No ☐		
Samples in proper container/bottle?	Yes ☒	No ☐	N/A ☐	
Sample containers intact?	Yes ☒	No ☐		
Sufficient sample volume for indicated test?	Yes ☒	No ☐		
All samples received within holding time?	Yes ☒	No ☐		
Container/Temp Blank temperature in compliance?	Yes ☒	No ☐	Temp: 25.4°C	* Air Samples
Water – VOA vials have zero headspace?	Yes ☐	No ☐	N/A ☒	
Water – pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☒	
Water – Sulfides present in Cyanide samples?	Yes ☐	No ☐	N/A ☒	

Adjusted ? _____ Checked by: _____

Client contacted: _____ Date contacted: _____ Person contacted: _____

Contacted by: _____ Regarding: _____

Corrective Action: _____

SMO- counter

TRANSWEST GEOCHEM

Sample Receipt Checklist

Client Name: City of Tucson

Date and Time Received: 8/8/06 0919

Work Order Number: 0608090

Checked by: lm

Checklist completed by: Leslie May 8/8/06
Signature / Date

Logged In by: lm 8/8/06
Initials / Date

Matrix: Air Carrier Name: Client TGI Express It

Reviewed by: MBM 8/9/06
Initials / Date

				COMMENTS
Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑	
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Container/Temp Blank temperature in compliance?	Yes ☐	No ☐	Temp: NA	Sampled < 2hrs ☐
Water – VOA vials have zero headspace?	Yes ☐	No ☐	N/A ☑	
Water – pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	Checked by: _____
Water – Sulfides present in Cyanide samples?	Yes ☐	No☐	N/A ☑	
Sample considered Drinking Water for metal analysis?	Yes ☐	No☐	N/A ☑	

Client contacted: _____ Date contacted: _____ Person contacted: _____

Contacted by: _____ Regarding: _____

Corrective Action: _____

TRANSWEST GEOCHEM

August 04, 2006

RECEIVED
AUG 07 2006
ENVIRONMENTAL SERVICES
100 N. STONE AVE., 2ND FLOO

Alison Jones
City of Tucson, Environmental Services
100 N. Stone, 2nd Floor, W. Side
Tucson, AZ 85701

RE:

Work Order No.: 0607388

Dear Alison,

Transwest Geochem, Inc. received 2 samples on 7/26/06. The results of the analyses are presented in the following report.

The Case Narrative of this report addresses any Quality Control and/or Quality Assurance issues associated with this Work Order.

If you have any questions regarding these test results, please feel free to call us at (602) 437-0330.

Sincerely,

Matt Hill
Project Manager

ADHS License No. AZM133/AZ0133

3725 E. Atlanta Avenue • Phoenix, Arizona 85040 • (602) 437-0330 • (800) 927-5183 • Fax (602) 437-0660
3860 S. Palo Verde Rd. • Suite 301 • Tucson, Arizona 85714 • (520) 573-1061 • Fa

Client: City of Tucson, Environmental Services
Work Order: 0607388
Project Name:
Project Number:

TRANSWEST GEOCHEM

Date Printed: 04-Aug-06

Case Narrative

All method blanks, laboratory spikes, and/or matrix spikes met quality control objectives for the parameters associated with this Work Order except as detailed below or on the Data Qualifier page of this report. Data Qualifiers used in this report are in accordance with ADEQ Arizona Data Qualifiers, Revision 2.0 11/26/2003.

Data qualifiers ("flags") contained within this analytical report have been issued to explain a quality control deficiency, and do not affect the quality (validity) of the data unless noted otherwise in the case narrative.

3725 E. Atlanta Avenue • Phoenix, Arizona 85040 • (602) 437-0330 • (800) 927-5183 • Fax (602) 437-0660
3860 S. Palo Verde Rd. • Suite 301 • Tucson, Arizona 85714 • (520) 573-1061

Date Printed 01-Aug-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services

Project Name:

Project Number:

Work Order: 0607388

Date Received: 26-Jul-06

Case Narrative
Data Qualifiers

One or more of the following data qualifiers may be associated with your analytical and/or quality control data.

D1 Sample required dilution due to matrix.

D2 Sample required dilution due to high concentration of target analyte.

TRANSWEST GEOCHEM

Date Printed 01-Aug-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services

Project Name:

Project Number:

Work Order: 0607388

Work Order Sample Summary

Client Sample ID	Lab Sample ID	Test Code	Collection Date	Date Received
P-1	0607388-01A	8021B/8015B	7/26/06 08:50 AM	7/26/06 09:30 AM
P-2	0607388-02A	8021B/8015B	7/26/06 08:55 AM	7/26/06 09:30 AM

Date Printed 01-Aug-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services

Project Name:

Project Number:

Work Order: 0607388

Date Received: 26-Jul-06

Definitions

Analytical Spike (AS)	The AS is a known amount of a target analyte added to a sample after it has been distilled, digested, or extracted and is ready for analysis. The AS is generally performed if the MS has failed. It is used to indicate interference that arises from sample distillation, digestion, or extraction as opposed to interference that is innate to the matrix.
Continuing Curve Verification (CCV)	The CCV is also referred to as a curve check. This is a standard analyzed at specified intervals during an analysis. The CCV verifies the stability and accuracy of the calibration curve. There are specific CCV recovery acceptance criteria for each method.
Dilution Factor (DF)	The DF is an indication of how much a sample had to be diluted in order to quantitate it on a standard curve. The DF is indicated in the reported sample result. The sample PQL increases as the dilution increases.
Internal Standard (IS)	The IS is a compound that is similar to the organic compound of interest in terms of chemical composition but is unique in that it is rare in the environment. The same concentration of IS is added to every sample for some organic methods.
Laboratory Control Sample (LCS)	The LCS is also referred to as a blank spike. The LCS is an addition of a known amount of a target analyte (from the same source as calibration standards or spikes) to an aliquot of deionized water or other appropriate clean matrix. The LCS is processed through the entire method procedure in the same manner as samples.
Matrix Spike (MS)	The MS is a known amount of a target analyte added to a sample. The MS is processed through the entire method procedure in the same manner as samples.
Method Blank (MB)	The MB is an aliquot of deionized water or other appropriate clean matrix that is thought to be free of the analyte in question. The MB is processed through the entire extraction or analysis procedure and is used to indicate contamination in the lab.
Method Detection Limit (MDL)	The MDL is the lowest level of detection of which a method is capable.
Practical Quantitation Limit (PQL)	The PQL is the lowest value at which Transwest Geochem can detect an analyte in matrix with a high degree of confidence. The PQL will increase as the DF increases. The PQL is greater than or equal to the MDL.
Relative Percent Difference (RPD)	The RPD is a measure of precision (the ability to obtain the same result on re-analysis of the same sample). It is calculated using the result of a sample, MS, LCS, or LCSV and its associated duplicate result.
Secondary Source QC Sample (LCSV)	The LCSV is also referred to as a second source laboratory control sample. It is the same type of standard as a calibration or spiking standard but is obtained from a different source. The LCSV is an indication of the primary standard quality, method performance, and instrument performance.
Surrogate	A surrogate compound is similar to the organic compound of interest in terms of chemical composition but is unique in that it is rare in the environment. When surrogates are used, they are added to every sample, blank and standard. Surrogate recovery is used as an indication of extraction and/or analytical success.
Trip Blank (TB)	The TB is a portion of deionized water preserved in the same manner as the samples. The TB travels from the lab, to the field, and then back to the lab with the samples from the field. The TB serves as an indication of contamination introduced during sample transportation.

References

Transwest Geochem, Inc. uses the methods outlined in the following references:

Code of Federal Regulations, 40CFR, Part 136, Appendix A, 1998.

Standard Methods for the Examination of Water and Wastewater, 19th Edition, 1995.

Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Revised March 1983.

Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, Revised August 1993.

Methods for the Determination of Metals in Environmental Samples, Supplement 1: EPA/600/R-94/111, Revised May 1994.

Methods for the Determination of Organic Compounds in Drinking Water, EPA/600/4-88/039, Revised July, 1991; EPA-600/4-90/020, Supplement I, July 1990; EPA-600/R-92/129; Supplement II, August 1992; EPA-600/R-95/131, Supplement III, August 1995.

Hach, Water Analysis Handbook, 3rd Edition, 1997.

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition, 1986 including Update I, July 1992; Update IIA, August 1993; Update II; September 1994; Update IIB, January 1995; Update III, December 1996

Bureau of Laboratory Services, State of Arizona Department of Health Services Method 418.1AZ: TPH in Soil, September 1994.

Bureau of Laboratory Services, State of Arizona Department of Health Services Method 8015AZ.R1, September 1998. (Comment: C6-C10 GRO reported by this method is not to be used in compliance situations)

ASTM MethodD4982, Annual Book of ASTM Standards, Volumes 11.01 and 11.02, 1995

The Determination of Polychlorinated Biphenyls in Transformer Fluid and Waste Oils, EPA-600 4-81-045, September 1982.

TRANSWEST GEOCHEM

Date Printed 01-Aug-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0607388
Lab ID: 0607388-01
Project Name:
Project Number:

Client Sample ID: P-1
Collection Date: 7/26/2006 8:50:00 AM
Matrix: Air

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene	**13**	0.50		mg/m³	1.0	8021B/8015B	7/26/06	7/27/06	MO	ML02060727
Benzene-ppmv	**4.20**	0.16		ppmv	1.00	8021B/8015B	N/A	7/27/06	MO	ML02060727B
Toluene	**26**	1.0		mg/m³	1.0	8021B/8015B	7/26/06	7/27/06	MO	ML02060727
Toluene-ppmv	**6.96**	0.27		ppmv	1.00	8021B/8015B	N/A	7/27/06	MO	ML02060727B
Ethylbenzene	**17**	1.0		mg/m³	1.0	8021B/8015B	7/26/06	7/27/06	MO	ML02060727
Ethylbenzene-ppmv	**3.97**	0.23		ppmv	1.00	8021B/8015B	N/A	7/27/06	MO	ML02060727B
Xylenes, total	**120**	7.5	D1	mg/m³	5.0	8021B/8015B	7/26/06	7/27/06	MO	ML02060727
Xylenes, total-ppmv	**27.39**	1.75	D1	ppmv	5.00	8021B/8015B	N/A	7/27/06	MO	ML02060727B
TVFHC (C6-C10)	**2200**	500	D2	mg/m³	5.0	8021B/8015B	7/26/06	7/27/06	MO	ML02060727
TVFHC (C6-C10)-ppmv	**548.23**	120.00	D2	ppmv	5.00	8021B/8015B	N/A	7/27/06	MO	ML02060727B
Bromofluorobenzene(Surrogate)	99	70-130		%REC	1.0	8021B/8015B	7/26/06	7/27/06	MO	ML02060727

TRANSWEST GEOCHEM

Date Printed 01-Aug-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0607388
Lab ID: 0607388-02
Project Name:
Project Number:

Client Sample ID: P-2
Collection Date: 7/26/2006 8:55:00 AM
Matrix: Air

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene	**6.4**	0.50		mg/m³	1.0	8021B/8015B	7/26/06	7/27/06	MO	ML02060727
Benzene-ppmv	**2.01**	0.16		ppmv	1.00	8021B/8015B	N/A	7/27/06	MO	ML02060727B
Toluene	**2.2**	1.0		mg/m³	1.0	8021B/8015B	7/26/06	7/27/06	MO	ML02060727
Toluene-ppmv	**0.58**	0.27		ppmv	1.00	8021B/8015B	N/A	7/27/06	MO	ML02060727B
Ethylbenzene	**7.4**	1.0		mg/m³	1.0	8021B/8015B	7/26/06	7/27/06	MO	ML02060727
Ethylbenzene-ppmv	**1.71**	0.23		ppmv	1.00	8021B/8015B	N/A	7/27/06	MO	ML02060727B
Xylenes, total	**34**	1.5		mg/m³	1.0	8021B/8015B	7/26/06	7/27/06	MO	ML02060727
Xylenes, total-ppmv	**7.88**	0.35		ppmv	1.00	8021B/8015B	N/A	7/27/06	MO	ML02060727B
TVFHC (C6-C10)	**1600**	500	D2	mg/m³	5.0	8021B/8015B	7/26/06	7/27/06	MO	ML02060727
TVFHC (C6-C10)-ppmv	**385.60**	120.00	D2	ppmv	5.00	8021B/8015B	N/A	7/27/06	MO	ML02060727B
Bromofluorobenzene(Surrogate)	98	70-130		%REC	1.0	8021B/8015B	7/26/06	7/27/06	MO	ML02060727

Confidential and Privileged

Date: 01-Aug-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services

Work Order: 0607388

Project:

QC SUMMARY REPORT

Method Blank

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene-ppmv	<0.16	0.16		ppmv	1	8021B/8015B	N/A	7/27/06	MO	ML02060727B
Toluene-ppmv	<0.27	0.27		ppmv	1	8021B/8015B	N/A	7/27/06	MO	ML02060727B
Ethylbenzene-ppmv	<0.23	0.23		ppmv	1	8021B/8015B	N/A	7/27/06	MO	ML02060727B
Xylenes, total-ppmv	<0.35	0.35		ppmv	1	8021B/8015B	N/A	7/27/06	MO	ML02060727B
TVFHC (C6-C10)-ppmv	<24.00	24.00		ppmv	1	8021B/8015B	N/A	7/27/06	MO	ML02060727B
Benzene	<0.50	0.50		mg/m³	1	8021B/8015B	7/26/06	7/27/06	MO	ML02060727
Toluene	<1.0	1.0		mg/m³	1	8021B/8015B	7/26/06	7/27/06	MO	ML02060727
Ethylbenzene	<1.0	1.0		mg/m³	1	8021B/8015B	7/26/06	7/27/06	MO	ML02060727
Xylenes, total	<1.5	1.5		mg/m³	1	8021B/8015B	7/26/06	7/27/06	MO	ML02060727
TVFHC (C6-C10)	<100	100		mg/m³	1	8021B/8015B	7/26/06	7/27/06	MO	ML02060727
Bromofluorobenzene	101	70-130		%REC	1	8021B/8015B	7/26/06	7/27/06	MO	ML02060727

Date: 01-Aug-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0607388
Project:

QC SUMMARY REPORT

Sample Duplicate

Analyte	Result	PQL	Units	RPD Ref Val	% RPD	RPD Limit	Test Code	Date Prepared	Date Analyzed	Analyst	Qual
Sample ID: **0607374-01BD**		Batch ID: ML02060727									
Client ID:											
Benzene	7.504	5.0	mg/m³	8.715	15%	30	8021B/8015B	7/26/06	7/27/06	MO	
Toluene	172.4	10	mg/m³	176.3	2%	30	8021B/8015B	7/26/06	7/27/06	MO	
Ethylbenzene	80.61	10	mg/m³	85.91	6%	30	8021B/8015B	7/26/06	7/27/06	MO	
Xylenes, total	433.1	15	mg/m³	427.1	1%	30	8021B/8015B	7/26/06	7/27/06	MO	
TVFHC (C6-C10)	5550	1000	mg/m³	5813	5%	30	8021B/8015B	7/26/06	7/27/06	MO	

Date: 01-Aug-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services

Work Order: 0607388

Project:

QC SUMMARY REPORT

Blank Spike

Analyte	Result	PQL	SPK value	SPK Ref Val	% Rec	Low Limit	High Limit	RPD Ref Val	% RPD	RPD Limit	Qual
Sample ID: **LCS 7/27**	Batch ID: ML02060727			Test Code: 8021B/8015B				Date Analyzed: 07/27/06 00:00			
				Units: mg/m³				Date Prepared: 7/26/06			
Benzene	5.200	0.50	5.000		104%	70	130				
Toluene	5.100	1.0	5.000		102%	70	130				
Ethylbenzene	5.200	1.0	5.000		104%	70	130				
Xylenes, total	15.916	1.5	15.00		106%	70	130				
TVFHC (C6-C10)	270.4	100	250.0		108%	70	130				
Bromofluorobenzene	10.10	0.50	10.00		101%	70	130				

GEOCHEM

Sample Receipt Checklist

Client Name: COT - ES

Date and Time Received: 7/26/06 9:30

Work Order Number: 0607388

Received by: Richard Mosher

Checklist completed by: Jeri Collins 7/26/06
Signature / Date

Logged In by: _____
Initials / Date

Reviewed by: _____
Initials / Date

Matrix: Vapor

Carrier Name: Client

				COMMENTS
Shipping container/cooler in good condition?	Yes ☐	No ☐	Not Present ☒	
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☒	
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☒	
Chain of custody present?	Yes ☒	No ☐		
Chain of custody signed when relinquished and received?	Yes ☒	No ☐		
Chain of custody agrees with sample labels?	Yes ☒	No ☐		
Samples in proper container/bottle?	Yes ☒	No ☐	N/A ☐	
Sample containers intact?	Yes ☒	No ☐		
Sufficient sample volume for indicated test?	Yes ☒	No ☐		
All samples received within holding time?	Yes ☒	No ☐		
Container/Temp Blank temperature in compliance?	Yes ☒	No ☐	Temp: Ambient	* Air Samples
Water – VOA vials have zero headspace?	Yes ☐	No ☐	N/A ☒	
Water – pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☒	
Water – Sulfides present in Cyanide samples?	Yes ☐	No ☐	N/A ☒	

Adjusted ? _____ Checked by: _____

Client contacted: _____ Date contacted: _____ Person contacted: _____

Contacted by: _____ Regarding: _____

Corrective Action: _____

TRANSWEST GEOCHEM

Sample Receipt Checklist

Client Name: City of Tucson

Date and Time Received: 7/26/06 1445

Work Order Number: 0607388

Checked by: /ns

Checklist completed by: Leslie May 7/26/06
Signature / Date

Logged In by: 7/27/06
Initials / Date

Matrix: Air Carrier Name: Client TGI Express It

Reviewed by: M Miatt 7/28/06
Initials / Date

				COMMENTS
Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑	
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	Temp: Amb	Sampled < 2hrs ☐
Water – VOA vials have zero headspace?	Yes ☐	No ☐	N/A ☑	
Water – pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	Checked by: _____
Water – Sulfides present in Cyanide samples?	Yes ☐	No ☐	N/A ☑	
Sample considered Drinking Water for metal analysis?	Yes ☐	No ☐	N/A ☑	

Client contacted: _____ Date contacted: _____ Person contacted: _____

Contacted by: _____ Regarding: _____

Corrective Action: _____

TRANSWEST GEOCHEM

3725 E. Atlanta Ave.
Phoenix, Arizona 85040
Phone: (602) 437-0330
Fax: (602) 437-0660

3860 S. Palo Verde Rd., Ste. 301
Tucson, Arizona 85714
Phone: (520) 573-1061
Fax: (520) 573-1063

Chain of Custody

TGI Work Order No: 0607388

Date 7/26/06 Page 1 of 1

Project Manager:	Molly Collins
Client Name:	COT Environmental Services
Address:	
City, State, Zip:	
Phone:	Fax:

Bill to:	
Company:	COT Environmental Services
Address:	
City, State, Zip:	
Phone:	Fax:

P.O. No.:	
Project Name:	100th Ave
Project Number:	

SAMPLE RECEIPT

Temperature:	Amb	Ice:	
Received Intact:	Yes / No / N/A	Absent / Present	
Custody Seals:	Yes / No / N/A	Wet / Blue	
Total No. of Containers:	2	Sampled <2 hrs ago	

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Lab ID	No. of Containers	TPH, (8015AZR.1)	BTEX (8021B)	Volatile Organics GCMS (624/8260B)	SDWA Volatiles, (524.2)	Semi-Volatile Organics GCMS (625/8270)	Organochlorine Pesticides (608/8081)	PCB's, (8082)	PAH, EPA (8310)	8 RCRA Metals	Comments
P-1	VA	7/26	0800	-01	1		X								
P-2	VA	7/26	0805	-02	1		X								

Relinquished by: (Signature)	(Print Name)	Received by: (Signature)	(Print Name)	Date / Time
1 Matt Wallace	Matt Wallace	R Mosher	R Mosher	7/26/06 09:30
2 Terri Collins	Terri Collins		Express It	7/26/06 11:00
3	Express It		Leslie May	7/26/06 1445

White copy to TGI, Yellow copy for final report, Pink copy to sampler

Revised: 3/6/06

TRANSWEST GEOCHEM

July 10, 2006

Alison Jones
City of Tucson, Environmental Services
100 N. Stone, 2nd Floor, W. Side
Tucson, AZ 85701

RECEIVED
JUL 14 2006
ENVIRONMENTAL SERVICES
100 N. STONE AVE., 2ND FLOOR

RE: Toole

Work Order No.: 0606517

Dear Alison,

Transwest Geochem, Inc. received 2 samples on 6/29/06. The results of the analyses are presented in the following report.

The Case Narrative of this report addresses any Quality Control and/or Quality Assurance issues associated with this Work Order.

If you have any questions regarding these test results, please feel free to call us at (602) 437-0330.

Sincerely,

Matt Hill
Project Manager

ADHS License No. AZM133/AZ0133

TRANSWEST GEOCHEM

Client: City of Tucson, Environmental Services
Work Order: 0606517
Project Name: Toole
Project Number:

Date Printed: 10-Jul-06

Case Narrative

All method blanks, laboratory spikes, and/or matrix spikes met quality control objectives for the parameters associated with this Work Order except as detailed below or on the Data Qualifier page of this report. Data Qualifiers used in this report are in accordance with ADEQ Arizona Data Qualifiers, Revision 2.0 11/26/2003.

Data qualifiers ("flags") contained within this analytical report have been issued to explain a quality control deficiency, and do not affect the quality (validity) of the data unless noted otherwise in the case narrative.

Date Printed 06-Jul-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Project Name: Toole
Project Number:
Work Order: 0606517
Date Received: 29-Jun-06

Case Narrative
Data Qualifiers

One or more of the following data qualifiers may be associated with your analytical and/or quality control data.

D1	Sample required dilution due to matrix.
D2	Sample required dilution due to high concentration of target analyte.

TRANSWEST GEOCHEM

Date Printed 06-Jul-06
License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Project Name: Toole
Project Number:
Work Order: 0606517

Work Order Sample Summary

Client Sample ID	Lab Sample ID	Test Code	Collection Date	Date Received
Toole-062906-IN	0606517-01A	8021B/8015B	6/29/06 07:30 AM	6/29/06 07:52 AM
Toole-062906-EFF	0606517-02A	8021B/8015B	6/29/06 07:35 AM	6/29/06 07:52 AM

Date Printed 06-Jul-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Project Name: Toole
Project Number:
Work Order: 0606517
Date Received: 29-Jun-06

Definitions

Analytical Spike (AS)	The AS is a known amount of a target analyte added to a sample after it has been distilled, digested, or extracted and is ready for analysis. The AS is generally performed if the MS has failed. It is used to indicate interference that arises from sample distillation, digestion, or extraction as opposed to interference that is innate to the matrix.
Continuing Curve Verification (CCV)	The CCV is also referred to as a curve check. This is a standard analyzed at specified intervals during an analysis. The CCV verifies the stability and accuracy of the calibration curve. There are specific CCV recovery acceptance criteria for each method.
Dilution Factor (DF)	The DF is an indication of how much a sample had to be diluted in order to quantitate it on a standard curve. The DF is indicated in the reported sample result. The sample PQL increases as the dilution increases.
Internal Standard (IS)	The IS is a compound that is similar to the organic compound of interest in terms of chemical composition but is unique in that it is rare in the environment. The same concentration of IS is added to every sample for some organic methods.
Laboratory Control Sample (LCS)	The LCS is also referred to as a blank spike. The LCS is an addition of a known amount of a target analyte (from the same source as calibration standards or spikes) to an aliquot of deionized water or other appropriate clean matrix. The LCS is processed through the entire method procedure in the same manner as samples.
Matrix Spike (MS)	The MS is a known amount of a target analyte added to a sample. The MS is processed through the entire method procedure in the same manner as samples.
Method Blank (MB)	The MB is an aliquot of deionized water or other appropriate clean matrix that is thought to be free of the analyte in question. The MB is processed through the entire extraction or analysis procedure and is used to indicate contamination in the lab.
Method Detection Limit (MDL)	The MDL is the lowest level of detection of which a method is capable.
Practical Quantitation Limit (PQL)	The PQL is the lowest value at which Transwest Geochem can detect an analyte in matrix with a high degree of confidence. The PQL will increase as the DF increases. The PQL is greater than or equal to the MDL.
Relative Percent Difference (RPD)	The RPD is a measure of precision (the ability to obtain the same result on re-analysis of the same sample). It is calculated using the result of a sample, MS, LCS, or LCSV and its associated duplicate result.
Secondary Source QC Sample (LCSV)	The LCSV is also referred to as a second source laboratory control sample. It is the same type of standard as a calibration or spiking standard but is obtained from a different source. The LCSV is an indication of the primary standard quality, method performance, and instrument performance.
Surrogate	A surrogate compound is similar to the organic compound of interest in terms of chemical composition but is unique in that it is rare in the environment. When surrogates are used, they are added to every sample, blank and standard. Surrogate recovery is used as an indication of extraction and/or analytical success.
Trip Blank (TB)	The TB is a portion of deionized water preserved in the same manner as the samples. The TB travels from the lab, to the field, and then back to the lab with the samples from the field. The TB serves as an indication of contamination introduced during sample transportation.

Date Printed 06-Jul-06

License No. AZM133/AZ0133

CLIENT:	City of Tucson, Environmental Services
Project Name:	Toole
Project Number:	
Work Order:	0606517
Date Received:	29-Jun-06

References

Transwest Geochem, Inc. uses the methods outlined in the following references:

Code of Federal Regulations, 40CFR, Part 136, Appendix A, 1998.

Standard Methods for the Examination of Water and Wastewater, 19th Edition, 1995.

Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Revised March 1983.

Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, Revised August 1993.

Methods for the Determination of Metals in Environmental Samples, Supplement 1: EPA/600/R-94/111, Revised May 1994.

Methods for the Determination of Organic Compounds in Drinking Water, EPA/600/4-88/039, Revised July, 1991; EPA-600/4-90/020, Supplement I, July 1990; EPA-600/R-92/129; Supplement II, August 1992; EPA-600/R-95/131, Supplement III, August 1995.

Hach, Water Analysis Handbook, 3rd Edition, 1997.

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition, 1986 including Update I, July 1992; Update IIA, August 1993; Update II; September 1994; Update IIB, January 1995; Update III, December 1996

Bureau of Laboratory Services, State of Arizona Department of Health Services Method 418.1AZ: TPH in Soil, September 1994.

Bureau of Laboratory Services, State of Arizona Department of Health Services Method 8015AZ.R1, September 1998. (Comment: C6-C10 GRO reported by this method is not to be used in compliance situations)

ASTM MethodD4982, Annual Book of ASTM Standards, Volumes 11.01 and 11.02, 1995

The Determination of Polychlorinated Biphenyls in Transformer Fluid and Waste Oils, EPA-600 4-81-045, September 1982.

TRANSWEST GEOCHEM

Date Printed 06-Jul-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0606517
Lab ID: 0606517-01
Project Name: Toole
Project Number:

Client Sample ID: Toole-062906-IN
Collection Date: 6/29/2006 7:30:00 AM
Matrix: Air

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene	**11**	0.50		mg/m³	1.0	8021B/8015B	6/29/06	6/30/06	MO	ML02060629
Benzene-ppmv	**3.39**	0.16		ppmv	1.00	8021B/8015B	N/A	6/30/06	MO	ML02060629B
Toluene	**13**	1.0		mg/m³	1.0	8021B/8015B	6/29/06	6/30/06	MO	ML02060629
Toluene-ppmv	**3.32**	0.27		ppmv	1.00	8021B/8015B	N/A	6/30/06	MO	ML02060629B
Ethylbenzene	**16**	1.0		mg/m³	1.0	8021B/8015B	6/29/06	6/30/06	MO	ML02060629
Ethylbenzene-ppmv	**3.58**	0.23		ppmv	1.00	8021B/8015B	N/A	6/30/06	MO	ML02060629B
Xylenes, total	**97**	7.5	D1	mg/m³	5.0	8021B/8015B	6/29/06	6/30/06	MO	ML02060629
Xylenes, total-ppmv	**22.45**	1.75	D1	ppmv	5.00	8021B/8015B	N/A	6/30/06	MO	ML02060629B
TVFHC (C6-C10)	**1900**	500	D2	mg/m³	5.0	8021B/8015B	6/29/06	6/30/06	MO	ML02060629
TVFHC (C6-C10)-ppmv	**474.95**	120.00	D2	ppmv	5.00	8021B/8015B	N/A	6/30/06	MO	ML02060629B
Bromofluorobenzene(Surrogate)	86	70-130		%REC	1.0	8021B/8015B	6/29/06	6/30/06	MO	ML02060629

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TRANSWEST GEOCHEM

Date Printed 06-Jul-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0606517
Lab ID: 0606517-02
Project Name: Toole
Project Number:

Client Sample ID: Toole-062906-EFF
Collection Date: 6/29/2006 7:35:00 AM
Matrix: Air

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene	<0.50	0.50		mg/m³	1.0	8021B/8015B	6/29/06	6/30/06	MO	ML02060629
Benzene-ppmv	<0.16	0.16		ppmv	1.00	8021B/8015B	N/A	6/30/06	MO	ML02060629B
Toluene	<1.0	1.0		mg/m³	1.0	8021B/8015B	6/29/06	6/30/06	MO	ML02060629
Toluene-ppmv	<0.27	0.27		ppmv	1.00	8021B/8015B	N/A	6/30/06	MO	ML02060629B
Ethylbenzene	<1.0	1.0		mg/m³	1.0	8021B/8015B	6/29/06	6/30/06	MO	ML02060629
Ethylbenzene-ppmv	<0.23	0.23		ppmv	1.00	8021B/8015B	N/A	6/30/06	MO	ML02060629B
Xylenes, total	<1.5	1.5		mg/m³	1.0	8021B/8015B	6/29/06	6/30/06	MO	ML02060629
Xylenes, total-ppmv	<0.35	0.35		ppmv	1.00	8021B/8015B	N/A	6/30/06	MO	ML02060629B
TVFHC (C6-C10)	<100	100		mg/m³	1.0	8021B/8015B	6/29/06	6/30/06	MO	ML02060629
TVFHC (C6-C10)-ppmv	<24.00	24.00		ppmv	1.00	8021B/8015B	N/A	6/30/06	MO	ML02060629B
Bromofluorobenzene(Surrogate)	101	70-130		%REC	1.0	8021B/8015B	6/29/06	6/30/06	MO	ML02060629

Confidential and Privileged

Date: 06-Jul-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0606517
Project: Toole

QC SUMMARY REPORT

Method Blank

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene-ppmv	<0.16	0.16		ppmv	1	8021B/8015B	N/A	6/30/06	MO	ML02060629B
Toluene-ppmv	<0.27	0.27		ppmv	1	8021B/8015B	N/A	6/30/06	MO	ML02060629B
Ethylbenzene-ppmv	<0.23	0.23		ppmv	1	8021B/8015B	N/A	6/30/06	MO	ML02060629B
Xylenes, total-ppmv	<0.35	0.35		ppmv	1	8021B/8015B	N/A	6/30/06	MO	ML02060629B
TVFHC (C6-C10)-ppmv	<24.00	24.00		ppmv	1	8021B/8015B	N/A	6/30/06	MO	ML02060629B
Benzene	<0.50	0.50		mg/m³	1	8021B/8015B	6/29/06	6/30/06	MO	ML02060629
Toluene	<1.0	1.0		mg/m³	1	8021B/8015B	6/29/06	6/30/06	MO	ML02060629
Ethylbenzene	<1.0	1.0		mg/m³	1	8021B/8015B	6/29/06	6/30/06	MO	ML02060629
Xylenes, total	<1.5	1.5		mg/m³	1	8021B/8015B	6/29/06	6/30/06	MO	ML02060629
TVFHC (C6-C10)	<100	100		mg/m³	1	8021B/8015B	6/29/06	6/30/06	MO	ML02060629
Bromofluorobenzene	94	70-130		%REC	1	8021B/8015B	6/29/06	6/30/06	MO	ML02060629

Date: 06-Jul-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0606517
Project: Toole

QC SUMMARY REPORT

Sample Duplicate

Analyte	Result	PQL	Units	RPD Ref Val	% RPD	RPD Limit	Test Code	Date Prepared	Date Analyzed	Analyst	Qual
Sample ID: **0606517-01AD**		Batch ID: ML02060629									
Client ID: **Toole-062906-IN**											
Benzene	10.60	0.50	mg/m³	10.80	2%	30	8021B/8015B	6/29/06	6/30/06	MO	
Toluene	12.10	1.0	mg/m³	12.50	3%	30	8021B/8015B	6/29/06	6/30/06	MO	
Ethylbenzene	14.80	1.0	mg/m³	15.50	5%	30	8021B/8015B	6/29/06	6/30/06	MO	
Xylenes, total	98.73	7.5	mg/m³	97.35	1%	30	8021B/8015B	6/29/06	6/30/06	MO	
TVFHC (C6-C10)	2037	500	mg/m³	1943	5%	30	8021B/8015B	6/29/06	6/30/06	MO	

Date: 06-Jul-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0606517
Project: Toole

QC SUMMARY REPORT

Blank Spike

Analyte	Result	PQL	SPK value	SPK Ref Val	% Rec	Low Limit	High Limit	RPD Ref Val	% RPD	RPD Limit	Qual
Sample ID: **LCS 6/30**	Batch ID: ML02060629			Test Code: 8021B/8015B				Date Analyzed: 06/30/06 00:00			
				Units: mg/m³				Date Prepared: 6/29/06			
Benzene	5.000	0.50	5.000		100%	70	130				
Toluene	4.700	1.0	5.000		94%	70	130				
Ethylbenzene	4.900	1.0	5.000		98%	70	130				
Xylenes, total	14.987	1.5	15.00		100%	70	130				
TVFHC (C6-C10)	236.7	100	250.0		95%	70	130				
Bromofluorobenzene	9.600	0.50	10.00		96%	70	130				

Mo

TRANSWEST GEOCHEM

Sample Receipt Checklist

Client Name: City of Tucson

Date and Time Received: 6/30/06 0910

Work Order Number: 0606517

Checked by: lm

Checklist completed by: Leslie May 6/30/06
Signature / Date

Logged In by: lm 6/30/06
Initials / Date

Matrix: Air

Carrier Name: Client TGI Express

Reviewed by: SP 7/30
Initials / Date

				COMMENTS
Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑	
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Container/Temp Blank temperature in compliance?	Yes ☐	No ☐	Temp: Amb	Sampled < 2hrs ☐
Water – VOA vials have zero headspace?	Yes ☐	No ☐	N/A ☑	
Water – pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	Checked by: _____
Water – Sulfides present in Cyanide samples?	Yes ☐	No ☐	N/A ☑	
Sample considered Drinking Water?	Yes ☐	No ☐	N/A ☑	

Client contacted: _____ Date contacted: _____ Person contacted: _____

Contacted by: _____ Regarding: _____

Corrective Action: _____

TRANSWEST GEOCHEM

Sample Receipt Checklist

Client Name: City of Tucson - ES

Date and Time Received: 6/29/06 07:52

Work Order Number: 0606517

Received by: Keith Konola

Checklist completed by: Keith K. 6/29/06
Signature / Date

Logged In by: _____
Initials / Date

Matrix: Air

Carrier Name: Verdad

Reviewed by: _____
Initials / Date

				COMMENTS
Shipping container/cooler in good condition?	Yes ☐	No ☐	Not Present ☑	
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑	
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐	N/A ☐	
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	Temp: 24.0°C → Tedlar Bags	
Water – VOA vials have zero headspace?	Yes ☐	No ☐	N/A ☑	
Water – pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	
Water – Sulfides present in Cyanide samples?	Yes ☐	No ☐	N/A ☑	

Adjusted ? _____ Checked by: _____

Client contacted: _____ Date contacted: _____ Person contacted: _____

Contacted by: _____ Regarding: _____

Corrective Action: _____

TRANSWEST GEOCHEM

3725 E. Atlanta Ave.
Phoenix, Arizona 85040
Phone: (602) 437-0330
Fax: (602) 437-0660

3860 S. Palo Verde Rd., Ste. 301
Tucson, Arizona 85714
Phone: (520) 573-1061
Fax: (520) 573-1063

Chain of Custody

TGI Work Order No: 0606517

Date 6.29.06 Page 1 of 1

Project Manager:	Milly Collins
Client Name:	COT ENV
Address:	
City, State, Zip:	
Phone:	791-5414 Fax:

Bill To:	COT - ENV
Company:	
Address:	
City, State, Zip:	
Phone:	Fax:

P.O. No.:	
Project Name:	Toole
Project Number:	

SAMPLE RECEIPT

Temperature:	24.0°C	Ice:
Received Intact:	Yes No N/A	Absent / Present
Custody Seals:	Yes No N/A	Wet / Blue
Total No. of Containers:	2	Sampled <2 hrs ago

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Lab ID	No. of Containers	TPH, (8015AZR.1)	BTEX (8021B)	Volatile Organics GCMS (624/8260B)	SDWA Volatiles, (524.2)	Semi-Volatile Organics GCMS (625/8270)	Organochlorine Pesticides (608/8081)	PCB's, (8082)	PAH, EPA (8310)	8 RCRA Metals	Comments
Toole-062906-IN	~~AQ~~ All	6.29.06	0730	01	1	X	X								
Toole-062906-EFF	~~AQ~~ All	6.29.06	0735	02	1	X	X								

Relinquished by: (Signature)	(Print Name)	Received by: (Signature)	(Print Name)	Date/Time
1	Gene Fonchase	Keith Konola	Keith Konola	6/29/06 07:52
2 Kerri Collins	Kerri Collins		Express It	6/29/06 15:00
3	Express It	Leslie May	Leslie May	6/30/06 0910

Revised: 3/6/06

White copy to TGI, Yellow copy for final report, Pink copy to sampler

TRANSWEST GEOCHEM

RECEIVED

JUN 30 2006

ENVIRONMENTAL SERVICES
100 N. STONE AVE., 2ND FLOOR

June 28, 2006

Alison Jones
City of Tucson, Environmental Services
100 N. Stone, 2nd Floor, W. Side
Tucson, AZ 85701

RE: Toole

Work Order No.: 0606274

Dear Alison,

Transwest Geochem, Inc. received 1 sample on 6/15/06. The results of the analyses are presented in the following report.

The Case Narrative of this report addresses any Quality Control and/or Quality Assurance issues associated with this Work Order.

If you have any questions regarding these test results, please feel free to call us at (602) 437-0330.

Sincerely,

E. Prop for T. Dutton

Matt Hill
Project Manager

ADHS License No. AZM133/AZ0133

3725 E. Atlanta Avenue • Phoenix, Arizona 85040 • (602) 437-0330 • (800) 927-5183 • Fax (602) 437-0660
3860 S. Palo Verde Rd. • Suite 301 • Tucson, Arizona 85714 • (520) 573-1061 • Fax (520) 573-1063

100% Recycled

TRANSWEST GEOCHEM

Client: City of Tucson, Environmental Services
Work Order: 0606274
Project Name: Toole
Project Number:

Date Printed: 28-Jun-06

Case Narrative

All method blanks, laboratory spikes, and/or matrix spikes met quality control objectives for the parameters associated with this Work Order except as detailed below or on the Data Qualifier page of this report. Data Qualifiers used in this report are in accordance with ADEQ Arizona Data Qualifiers, Revision 2.0 11/26/2003.

Data qualifiers ("flags") contained within this analytical report have been issued to explain a quality control deficiency, and do not affect the quality (validity) of the data unless noted otherwise in the case narrative.

The vapor analysis performed by Transwest Geochem, Inc. is a non-compliance screening method based on a modified EPA method.

3725 E. Atlanta Avenue • Phoenix, Arizona 85040 • (602) 437-0330 • (800) 927-5183 • Fax (602) 437-0660
3860 S. Palo Verde Rd. • Suite 301 • Tucson, Arizona 85714 • (520) 573-1061 • Fax (520) 573-1063

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TRANSWEST GEOCHEM

Date Printed 28-Jun-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Project Name: Toole
Project Number:
Work Order: 0606274

Work Order Sample Summary

Client Sample ID	Lab Sample ID	Test Code	Collection Date	Date Received
Toole-061506-EFF	0606274-01A	8021B/8015B	6/15/06 09:30 AM	6/15/06 10:57 AM

Date Printed 28-Jun-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Project Name: Toole
Project Number:
Work Order: 0606274
Date Received: 15-Jun-06

Definitions

Analytical Spike (AS)	The AS is a known amount of a target analyte added to a sample after it has been distilled, digested, or extracted and is ready for analysis. The AS is generally performed if the MS has failed. It is used to indicate interference that arises from sample distillation, digestion, or extraction as opposed to interference that is innate to the matrix.
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Method Detection Limit (MDL)	The MDL is the lowest level of detection of which a method is capable.
Practical Quantitation Limit (PQL)	The PQL is the lowest value at which Transwest Geochem can detect an analyte in matrix with a high degree of confidence. The PQL will increase as the DF increases. The PQL is greater than or equal to the MDL.
Relative Percent Difference (RPD)	The RPD is a measure of precision (the ability to obtain the same result on re-analysis of the same sample). It is calculated using the result of a sample, MS, LCS, or LCSV and its associated duplicate result.
Secondary Source QC Sample (LCSV)	The LCSV is also referred to as a second source laboratory control sample. It is the same type of standard as a calibration or spiking standard but is obtained from a different source. The LCSV is an indication of the primary standard quality, method performance, and instrument performance.
Surrogate	A surrogate compound is similar to the organic compound of interest in terms of chemical composition but is unique in that it is rare in the environment. When surrogates are used, they are added to every sample, blank and standard. Surrogate recovery is used as an indication of extraction and/or analytical success.
Trip Blank (TB)	The TB is a portion of deionized water preserved in the same manner as the samples. The TB travels from the lab, to the field, and then back to the lab with the samples from the field. The TB serves as an indication of contamination introduced during sample transportation.

Date Printed 28-Jun-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Project Name: Toole
Project Number:
Work Order: 0606274
Date Received: 15-Jun-06

References

Transwest Geochem, Inc. uses the methods outlined in the following references:

Code of Federal Regulations, 40CFR, Part 136, Appendix A, 1998.

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Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Revised March 1983.

Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, Revised August 1993.

Methods for the Determination of Metals in Environmental Samples, Supplement 1: EPA/600/R-94/111, Revised May 1994.

Methods for the Determination of Organic Compounds in Drinking Water, EPA/600/4-88/039, Revised July, 1991; EPA-600/4-90/020, Supplement I, July 1990; EPA-600/R-92/129; Supplement II, August 1992; EPA-600/R-95/131, Supplement III, August 1995.

Hach, Water Analysis Handbook, 3rd Edition, 1997.

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition, 1986 including Update I, July 1992; Update IIA, August 1993; Update II; September 1994; Update IIB, January 1995; Update III, December 1996

Bureau of Laboratory Services, State of Arizona Department of Health Services Method 418.1AZ: TPH in Soil, September 1994.

Bureau of Laboratory Services, State of Arizona Department of Health Services Method 8015AZ.R1, September 1998. (Comment: C6-C10 GRO reported by this method is not to be used in compliance situations)

ASTM MethodD4982, Annual Book of ASTM Standards, Volumes 11.01 and 11.02, 1995

The Determination of Polychlorinated Biphenyls in Transformer Fluid and Waste Oils, EPA-600 4-81-045, September 1982.

TRANSWEST GEOCHEM

Date Printed 28-Jun-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0606274
Lab ID: 0606274-01
Project Name: Toole
Project Number:

Client Sample ID: Toole-061506-EFF
Collection Date: 6/15/2006 9:30:00 AM
Matrix: Air

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene	<0.50	0.50		mg/m³	1.0	8021B/8015B	N/A	6/16/06	MO	ML02060616
Benzene-ppmv	<0.16	0.16		ppmv	1.00	8021B/8015B	N/A	6/16/06	MO	ML02060616B
Toluene	<1.0	1.0		mg/m³	1.0	8021B/8015B	N/A	6/16/06	MO	ML02060616
Toluene-ppmv	<0.27	0.27		ppmv	1.00	8021B/8015B	N/A	6/16/06	MO	ML02060616B
Ethylbenzene	<1.0	1.0		mg/m³	1.0	8021B/8015B	N/A	6/16/06	MO	ML02060616
Ethylbenzene-ppmv	<0.23	0.23		ppmv	1.00	8021B/8015B	N/A	6/16/06	MO	ML02060616B
Xylenes, total	<1.5	1.5		mg/m³	1.0	8021B/8015B	N/A	6/16/06	MO	ML02060616
Xylenes, total-ppmv	<0.35	0.35		ppmv	1.00	8021B/8015B	N/A	6/16/06	MO	ML02060616B
TVFHC (C6-C10)	<100	100		mg/m³	1.0	8021B/8015B	N/A	6/16/06	MO	ML02060616
TVFHC (C6-C10)-ppmv	<24.00	24.00		ppmv	1.00	8021B/8015B	N/A	6/16/06	MO	ML02060616B
Bromofluorobenzene(Surrogate)	96	70-130		%REC	1.0	8021B/8015B	N/A	6/16/06	MO	ML02060616

TRANSWEST GEOCHEM

Date: 28-Jun-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0606274
Project: Toole

QC SUMMARY REPORT

Method Blank

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene-ppmv	<0.16	0.16		ppmv	1	8021B/8015B	N/A	6/16/06	MO	ML02060616B
Toluene-ppmv	<0.27	0.27		ppmv	1	8021B/8015B	N/A	6/16/06	MO	ML02060616B
Ethylbenzene-ppmv	<0.23	0.23		ppmv	1	8021B/8015B	N/A	6/16/06	MO	ML02060616B
Xylenes, total-ppmv	<0.35	0.35		ppmv	1	8021B/8015B	N/A	6/16/06	MO	ML02060616B
TVFHC (C6-C10)-ppmv	<24.00	24.00		ppmv	1	8021B/8015B	N/A	6/16/06	MO	ML02060616B
Benzene	<0.50	0.50		mg/m³	1	8021B/8015B	N/A	6/16/06	MO	ML02060616B
Toluene	<1.0	1.0		mg/m³	1	8021B/8015B	N/A	6/16/06	MO	ML02060616
Ethylbenzene	<1.0	1.0		mg/m³	1	8021B/8015B	N/A	6/16/06	MO	ML02060616
Xylenes, total	<1.5	1.5		mg/m³	1	8021B/8015B	N/A	6/16/06	MO	ML02060616
TVFHC (C6-C10)	<100	100		mg/m³	1	8021B/8015B	N/A	6/16/06	MO	ML02060616
Bromofluorobenzene	99	70-130		%REC	1	8021B/8015B	N/A	6/16/06	MO	ML02060616

TRANSWEST GEOCHEM

Date: 28-Jun-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0606274
Project: Toole

QC SUMMARY REPORT

Sample Duplicate

Analyte	Result	PQL	Units	RPD Ref Val	% RPD	RPD Limit	Test Code	Date Prepared	Date Analyzed	Analyst	Qual
Sample ID: **0606274-01AD**		Batch ID: ML02060616									
Client ID: **Toole-061506-EFF**											
Benzene	<0.50	0.50	mg/m³	<0.50	0%	30	8021B/8015B	N/A	6/16/06	MO	
Toluene	<1.0	1.0	mg/m³	<1.0	0%	30	8021B/8015B	N/A	6/16/06	MO	
Ethylbenzene	<1.0	1.0	mg/m³	<1.0	0%	30	8021B/8015B	N/A	6/16/06	MO	
Xylenes, total	<1.5	1.5	mg/m³	<1.5	0%	30	8021B/8015B	N/A	6/16/06	MO	
TVFHC (C6-C10)	<100	100	mg/m³	<100	0%	30	8021B/8015B	N/A	6/16/06	MO	

TRANSWEST GEOCHEM

Date: 28-Jun-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0606274
Project: Toole

QC SUMMARY REPORT

Blank Spike

Analyte	Result	PQL	SPK value	SPK Ref Val	% Rec	Low Limit	High Limit	RPD Ref Val	% RPD	RPD Limit	Qual
Sample ID: **LCS 6/16**	Batch ID: ML02060616			Test Code: 8021B/8015B				Date Analyzed: 06/16/06 00:00			
				Units: mg/m³				Date Prepared: N/A			
Benzene	4.900	0.50	5.000		98%	70	130				
Toluene	4.900	1.0	5.000		98%	70	130				
Ethylbenzene	4.900	1.0	5.000		98%	70	130				
Xylenes, total	14.055	1.5	15.00		94%	70	130				
TVFHC (C6-C10)	245.6	100	250.0		98%	70	130				
Bromofluorobenzene	9.500	0.50	10.00		95%	70	130				

TRANSWEST GEOCHEM

Sample Receipt Checklist

Client Name: City of Tacson

Work Order Number: 0606 274

Date and Time Received: 6/16/06 0915

Checklist completed by: Leslie May 6/16/06
Signature / Date

Checked by: lm

Logged In by: PO 6/16/06
Initials / Date

Matrix: Vapor Carrier Name: Client TGI Express It

Reviewed by: [illegible] 6/19/06
Initials / Date

				COMMENTS
Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑	
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Container/Temp Blank temperature in compliance?	Yes ☐	No ☐	Temp: Amb	Sampled < 2hrs ☐
Water – VOA vials have zero headspace?	Yes ☐	No ☐	N/A ☑	
Water – pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	Checked by: ____
Water – Sulfides present in Cyanide samples?	Yes ☐	No ☐	N/A ☑	
Sample considered Drinking Water?	Yes ☐	No ☐	N/A ☑	

Client contacted: _____ Date contacted: _____ Person contacted: _____

Contacted by: _____ Regarding: _____

Corrective Action: _____

TRANSWEST GEOCHEM

Sample Receipt Checklist

Client Name: COT - Env.

Date and Time Received: 6/15/06 10:57

Work Order Number: 0606274

Received by: Kerri Collins

Checklist completed by: Kerri Collins 6/15/06
Signature / Date

Logged In by: _____
Initials / Date

Matrix: Air

Carrier Name: Client

Reviewed by: _____
Initials / Date

				COMMENTS
Shipping container/cooler in good condition?	Yes ☐	No ☐	Not Present ☒	
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☒	
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☒	
Chain of custody present?	Yes ☒	No ☐		
Chain of custody signed when relinquished and received?	Yes ☒	No ☐		
Chain of custody agrees with sample labels?	Yes ☒	No ☐		
Samples in proper container/bottle?	Yes ☒	No ☐	N/A ☐	
Sample containers intact?	Yes ☒	No ☐		
Sufficient sample volume for indicated test?	Yes ☒	No ☐		
All samples received within holding time?	Yes ☒	No ☐		
Container/Temp Blank temperature in compliance?	Yes ☒	No ☐	Temp: 24.2°C	
Water – VOA vials have zero headspace?	Yes ☐	No ☐	N/A ☒	
Water – pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☒	
Water – Sulfides present in Cyanide samples?	Yes ☐	No ☐	N/A ☒	

Adjusted ? _____ Checked by: _____

Client contacted: _____ Date contacted: _____ Person contacted: _____

Contacted by: _____ Regarding: _____

Corrective Action: _____

TRANSWEST GEOCHEM

3725 E. Atlanta Ave.
Phoenix, Arizona 85040
Phone: (602) 437-0330
Fax: (602) 437-0660

3860 S. Palo Verde Rd., Ste. 301
Tucson, Arizona 85714
Phone: (520) 573-1061
Fax: (520) 573-1063

Chain of Custody

TGI Work Order No: 0606 274

Date 6/15/06 Page 1 of 1

Project Manager:	Molly Collins
Client Name:	COT ENV
Address:	
City, State, Zip:	
Phone:	791-5414 Fax: -5417

Bill To:	COT ENV
Company:	
Address:	
City, State, Zip:	
Phone:	Fax:

P.O. No.:	~~Toole~~
Project Name:	Toole
Project Number:	

SAMPLE RECEIPT

Temperature:	24.2°C	Ice:
Received Intact:	Yes No N/A	Absent / Present
Custody Seals:	Yes No N/A	Wet / Blue
Total No. of Containers:	1	Sampled <2 hrs ago

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Lab ID	No. of Containers	TPH, (8015AZR.1)	BTEX (8021B)	Volatile Organics GCMS (624/8260B)	SDWA Volatiles, (524.2)	Semi-Volatile Organics GCMS (625/8270)	Organochlorine Pesticides (608/8081)	PCB's, (8082)	PAH, EPA (8310)	8 RCRA Metals	Comments
Toole-061506-EFF	Air	061506	0930	01	1	X	X								Rush: Results needed by Monday Am

Relinquished by: (Signature)	(Print Name)	Received by: (Signature)	(Print Name)	Date / Time
1	Geno Fonshee	Kerri Collins	Kerri Collins	6/15/06 10:57
2 Kerri Collins	Kerri Collins		Express It	6/15/06 1500
3	Express It	Leslie May	Leslie May	6-16-06 0915

White copy to TGI, Yellow copy for final report, Pink copy to sampler

Revised: 3/6/06

TRANSWEST GEOCHEM

June 14, 2007

Alison Jones
City of Tucson, Environmental Services
100 N. Stone, 2nd Floor, W. Side
Tucson, AZ 85701

RE: Toole

Work Order No.: 0706138

Dear Alison,

Transwest Geochem, Inc. received 2 samples on 6/07/07. The results of the analyses are presented in the following report.

The Case Narrative of this report addresses any Quality Control and/or Quality Assurance issues associated with this Work Order.

If you have any questions regarding these test results, please feel free to call us at (602) 437-0330.

Sincerely,

Marcia A. Smith
Project Manager

ADHS License No. AZM133/AZ0133

3725 E. Atlanta Avenue • Phoenix, Arizona 85040 • (602) 437-0330 • (800) 927-5183 • Fax (602) 437-0660
3860 S. Palo Verde Rd. • Suite 301 • Tucson, Arizona 85714 • (520) 573-1061 • Fax (520) 573-1063
100% Recycled

TRANSWEST GEOCHEM

Client: City of Tucson, Environmental Services
Work Order: 0706138
Project Name: Toole
Project Number:

Date Printed: 14-Jun-07

Case Narrative

All method blanks, laboratory spikes, and/or matrix spikes met quality control objectives for the parameters associated with this Work Order except as detailed below or on the Data Qualifier page of this report. Data Qualifiers used in this report are in accordance with ADEQ Arizona Data Qualifiers, Revision 2.0 11/26/2003.

Data qualifiers ("flags") contained within this analytical report have been issued to explain a quality control deficiency, and do not affect the quality (validity) of the data unless noted otherwise in the case narrative.

The vapor analysis performed by Transwest Geochem, Inc. is a non-compliance screening method based on a modified EPA method.

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TRANSWEST GEOCHEM

Date Printed 11-Jun-07
License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Project Name: Toole
Project Number:
Work Order: 0706138

Work Order Sample Summary

Client Sample ID	Lab Sample ID	Test Code	Collection Date	Date Received
Toole-060707-Inf	0706138-01A	8021B/8015B	6/07/07 01:15 PM	6/07/07 02:05 PM
Toole-060707-Eff	0706138-02A	8021B/8015B	6/07/07 01:30 PM	6/07/07 02:05 PM

Date Printed 11-Jun-07

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Project Name: Toole
Project Number:
Work Order: 0706138
Date Received: 07-Jun-07

Definitions

Analytical Spike (AS)	The AS is a known amount of a target analyte added to a sample after it has been distilled, digested, or extracted and is ready for analysis. The AS is generally performed if the MS has failed. It is used to indicate interference that arises from sample distillation, digestion, or extraction as opposed to interference that is innate to the matrix.
Continuing Curve Verification (CCV)	The CCV is also referred to as a curve check. This is a standard analyzed at specified intervals during an analysis. The CCV verifies the stability and accuracy of the calibration curve. There are specific CCV recovery acceptance criteria for each method.
Dilution Factor (DF)	The DF is an indication of how much a sample had to be diluted in order to quantitate it on a standard curve. The DF is indicated in the reported sample result. The sample PQL increases as the dilution increases.
Internal Standard (IS)	The IS is a compound that is similar to the organic compound of interest in terms of chemical composition but is unique in that it is rare in the environment. The same concentration of IS is added to every sample for some organic methods.
Laboratory Control Sample (LCS)	The LCS is also referred to as a blank spike. The LCS is an addition of a known amount of a target analyte (from the same source as calibration standards or spikes) to an aliquot of deionized water or other appropriate clean matrix. The LCS is processed through the entire method procedure in the same manner as samples.
Matrix Spike (MS)	The MS is a known amount of a target analyte added to a sample. The MS is processed through the entire method procedure in the same manner as samples.
Method Blank (MB)	The MB is an aliquot of deionized water or other appropriate clean matrix that is thought to be free of the analyte in question. The MB is processed through the entire extraction or analysis procedure and is used to indicate contamination in the lab.
Method Detection Limit (MDL)	The MDL is the lowest level of detection of which a method is capable.
Practical Quantitation Limit (PQL)	The PQL is the lowest value at which Transwest Geochem can detect an analyte in matrix with a high degree of confidence. The PQL will increase as the DF increases. The PQL is greater than or equal to the MDL.
Relative Percent Difference (RPD)	The RPD is a measure of precision (the ability to obtain the same result on re-analysis of the same sample). It is calculated using the result of a sample, MS, LCS, or LCSV and its associated duplicate result.
Secondary Source QC Sample (LCSV)	The LCSV is also referred to as a second source laboratory control sample. It is the same type of standard as a calibration or spiking standard but is obtained from a different source. The LCSV is an indication of the primary standard quality, method performance, and instrument performance.
Surrogate	A surrogate compound is similar to the organic compound of interest in terms of chemical composition but is unique in that it is rare in the environment. When surrogates are used, they are added to every sample, blank and standard. Surrogate recovery is used as an indication of extraction and/or analytical success.
Trip Blank (TB)	The TB is a portion of deionized water preserved in the same manner as the samples. The TB travels from the lab, to the field, and then back to the lab with the samples from the field. The TB serves as an indication of contamination introduced during sample transportation.

Date Printed: 11-Jun-07

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Project Name: Toole
Project Number:
Work Order: 0706138
Date Received: 07-Jun-07

References

Transwest Geochem, Inc. uses the methods outlined in the following references:

Code of Federal Regulations, 40CFR, Part 136, Appendix A, July 2005.

Standard Methods for the Examination of Water and Wastewater, 20th Edition, 1998.

Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Revised March 1983.

Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, Revised August 1993.

Methods for the Determination of Metals in Environmental Samples, Supplement 1: EPA/600/R-94/111, Revised May 1994.

Methods for the Determination of Organic Compounds in Drinking Water, EPA/600/4-88/039, Revised July, 1991; EPA-600/4-90/020, Supplement I, July 1990; EPA-600/R-92/129; Supplement II, August 1992; EPA-600/R-95/131, Supplement III, August 1995.

Hach, Water Analysis Handbook, 3rd Edition, 1997.

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition, 1986 including Update I, July 1992; Update IIA, August 1993; Update II; September 1994; Update IIB, January 1995; Update III, December 1996. Update IIIA, June 1999; and Update IIIB July 2005.

Bureau of Laboratory Services, State of Arizona Department of Health Services Method 8015AZ.R1, September 1998. (Comment: C6-C10 GRO reported by this method is not to be used in compliance situations)

ASTM MethodD4982, Annual Book of ASTM Standards, Volumes 11.01 and 11.02, 1995

The Determination of Polychlorinated Biphenyls in Transformer Fluid and Waste Oils, EPA-600 4-81-045, September 1982.

EPA Method 9013A, Cyanide Extraction Procedure for Solids and Oils. (Rev, 1 November 2004)

EPA Method 5035A, Closed-System Purge-and-Trap and Extraction for Volatile Organics in Soil and Waste Samples (draft rev. 1 July 2002)

EPA Method 5030C, Purge-and-Trap for Aqueous Samples (rev.3 May 2003)

Office of Ground Water and Drinking Water Technical Support Center, EPA 815-R-05-004, Manual for Certification of Drinking Water, (5th Edition January 2005)

TRANSWEST GEOCHEM

Date Printed 11-Jun-07

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0706138
Lab ID: 0706138-01
Project Name: Toole
Project Number:

Client Sample ID: Toole-060707-Inf
Collection Date: 6/7/2007 1:15:00 PM
Matrix: Air

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene	**1.9**	0.50		mg/m³	1.0	8021B/8015B	N/A	6/8/07	MO	GC4070608
Benzene-ppmv	**0.60**	0.16		ppmv	1.00	8021B/8015B	N/A	6/8/07	MO	GC4070608B
Toluene	**2.1**	1.0		mg/m³	1.0	8021B/8015B	N/A	6/8/07	MO	GC4070608
Toluene-ppmv	**0.56**	0.27		ppmv	1.00	8021B/8015B	N/A	6/8/07	MO	GC4070608B
Ethylbenzene	**1.3**	1.0		mg/m³	1.0	8021B/8015B	N/A	6/8/07	MO	GC4070608
Ethylbenzene-ppmv	**0.30**	0.23		ppmv	1.00	8021B/8015B	N/A	6/8/07	MO	GC4070608B
Xylenes, total	**8.0**	1.5		mg/m³	1.0	8021B/8015B	N/A	6/8/07	MO	GC4070608
Xylenes, total-ppmv	**1.84**	0.35		ppmv	1.00	8021B/8015B	N/A	6/8/07	MO	GC4070608B
TVFHC (C6-C10)	**550**	100		mg/m³	1.0	8021B/8015B	N/A	6/8/07	MO	GC4070608
TVFHC (C6-C10)-ppmv	**135.55**	24.00		ppmv	1.00	8021B/8015B	N/A	6/8/07	MO	GC4070608B
Bromofluorobenzene(Surrogate)	88	70-130		%REC	1.0	8021B/8015B	N/A	6/8/07	MO	GC4070608

TRANSWEST GEOCHEM

Date Printed 11-Jun-07

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0706138
Lab ID: 0706138-02
Project Name: Toole
Project Number:

Client Sample ID: Toole-060707-Eff
Collection Date: 6/7/2007 1:30:00 PM
Matrix: Air

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene	<0.50	0.50		mg/m³	1.0	8021B/8015B	N/A	6/8/07	MO	GC4070608
Benzene-ppmv	<0.16	0.16		ppmv	1.00	8021B/8015B	N/A	6/8/07	MO	GC4070608B
Toluene	<1.0	1.0		mg/m³	1.0	8021B/8015B	N/A	6/8/07	MO	GC4070608
Toluene-ppmv	<0.27	0.27		ppmv	1.00	8021B/8015B	N/A	6/8/07	MO	GC4070608B
Ethylbenzene	<1.0	1.0		mg/m³	1.0	8021B/8015B	N/A	6/8/07	MO	GC4070608
Ethylbenzene-ppmv	<0.23	0.23		ppmv	1.00	8021B/8015B	N/A	6/8/07	MO	GC4070608B
Xylenes, total	<1.5	1.5		mg/m³	1.0	8021B/8015B	N/A	6/8/07	MO	GC4070608
Xylenes, total-ppmv	<0.35	0.35		ppmv	1.00	8021B/8015B	N/A	6/8/07	MO	GC4070608B
TVFHC (C6-C10)	<100	100		mg/m³	1.0	8021B/8015B	N/A	6/8/07	MO	GC4070608
TVFHC (C6-C10)-ppmv	<24.00	24.00		ppmv	1.00	8021B/8015B	N/A	6/8/07	MO	GC4070608B
Bromofluorobenzene(Surrogate)	93	70-130		%REC	1.0	8021B/8015B	N/A	6/8/07	MO	GC4070608

TRANSWEST GEOCHEM

Date: 11-Jun-07

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0706138
Project: Toole

QC SUMMARY REPORT

Method Blank

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene-ppmv	<0.16	0.16		ppmv	1	8021B/8015B	N/A	6/8/07	MO	GC4070608B
Toluene-ppmv	<0.27	0.27		ppmv	1	8021B/8015B	N/A	6/8/07	MO	GC4070608B
Ethylbenzene-ppmv	<0.23	0.23		ppmv	1	8021B/8015B	N/A	6/8/07	MO	GC4070608B
Xylenes, total-ppmv	<0.35	0.35		ppmv	1	8021B/8015B	N/A	6/8/07	MO	GC4070608B
TVFHC (C6-C10)-ppmv	<24.00	24.00		ppmv	1	8021B/8015B	N/A	6/8/07	MO	GC4070608B
Benzene	<0.50	0.50		mg/m³	1	8021B/8015B	N/A	6/8/07	MO	GC4070608
Toluene	<1.0	1.0		mg/m³	1	8021B/8015B	N/A	6/8/07	MO	GC4070608
Ethylbenzene	<1.0	1.0		mg/m³	1	8021B/8015B	N/A	6/8/07	MO	GC4070608
Xylenes, total	<1.5	1.5		mg/m³	1	8021B/8015B	N/A	6/8/07	MO	GC4070608
TVFHC (C6-C10)	<100	100		mg/m³	1	8021B/8015B	N/A	6/8/07	MO	GC4070608
Bromofluorobenzene	91	70-130		%REC	1	8021B/8015B	N/A	6/8/07	MO	GC4070608

TRANSWEST GEOCHEM

Date: 11-Jun-07

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0706138
Project: Toole

QC SUMMARY REPORT

Sample Duplicate

Analyte	Result	PQL	Units	RPD Ref Val	% RPD	RPD Limit	Test Code	Date Prepared	Date Analyzed	Analyst	Qual
Sample ID: **0706109-01AD**		Batch ID: GC4070608									
Client ID:											
Benzene	23.56	2.5	mg/m³	26.53	12%	30	8021B/8015B	N/A	6/8/07	MO	
Toluene	71.05	5.0	mg/m³	67.95	4%	30	8021B/8015B	N/A	6/8/07	MO	
Ethylbenzene	12.53	5.0	mg/m³	12.28	2%	30	8021B/8015B	N/A	6/8/07	MO	
Xylenes, total	57.57	7.5	mg/m³	54.97	5%	30	8021B/8015B	N/A	6/8/07	MO	
TVFHC (C6-C10)	1205	500	mg/m³	1168	3%	30	8021B/8015B	N/A	6/8/07	MO	

TRANSWEST GEOCHEM

Date: 11-Jun-07

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0706138
Project: Toole

QC SUMMARY REPORT

Blank Spike

Analyte	Result	PQL	SPK value	SPK Ref Val	% Rec	Low Limit	High Limit	RPD Ref Val	% RPD	RPD Limit	Qual
Sample ID: **LCS 6/8**	Batch ID: GC4070608			Test Code: 8021B/8015B				Date Analyzed: 06/08/07 00:00			
				Units: mg/m³				Date Prepared: N/A			
Benzene	5.000	0.50	5.000		100%	70	130				
Toluene	4.800	1.0	5.000		96%	70	130				
Ethylbenzene	4.900	1.0	5.000		98%	70	130				
Xylenes, total	14.553	1.5	15.00		97%	70	130				
TVFHC (C6-C10)	239.3	100	250.0		96%	70	130				
Bromofluorobenzene	9.300	0.50	10.00		93%	70	130				

TRANSWEST GEOCHEM

Sample Receipt Checklist

Client Name: City of Tucson

Work Order Number: 0706138

Checklist completed by: Jeni Collins 6/7/07
Signature / Date

Date and Time Received: 6/7/07 14:05

Received by: Keith Konola

Logged In by: _____
Initials / Date

Reviewed by: _____
Initials / Date

Matrix: Air

Carrier Name: Client

				COMMENTS
Shipping container/cooler in good condition?	Yes ☐	No ☐	Not Present ☒	
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☒	
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☒	
Chain of custody present?	Yes ☒	No ☐		
Chain of custody signed when relinquished and received?	Yes ☒	No ☐		
Chain of custody agrees with sample labels?	Yes ☒	No ☐		
Samples in proper container/bottle?	Yes ☒	No ☐		
Sample containers intact?	Yes ☒	No ☐	N/A ☐	
Sufficient sample volume for indicated test?	Yes ☒	No ☐		
All samples received within holding time?	Yes ☒	No ☐		
Container/Temp Blank temperature in compliance?	Yes ☒	No ☐	Temp: 23.8°C	
Water – VOA vials have zero headspace?	Yes ☐	No ☐	N/A ☒	
Water – pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☒	
Water – Sulfides present in Cyanide samples?	Yes ☐	No ☐	N/A ☒	

Adjusted ? _____ Checked by: _____

Client contacted: _____ Date contacted: _____ Person contacted: _____

Contacted by: _____ Regarding: _____

Corrective Action: _____

Storage Location: ML-HO

TRANSWEST GEOCHEM

Sample Receipt Checklist

Client Name: City of Tucson

Date and Time Received: 6/8/07 0930

Work Order Number: 0706138

Checked by: lm

Checklist completed by: Leslie May 6/8/07
Signature / Date

Logged In by: 6-8-07
Initials / Date

Matrix: Air Carrier Name: Client TGI Express H

Reviewed by: 6/13/07
Initials / Date

				COMMENTS
Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑	
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Container/Temp Blank temperature in compliance?	Yes ☐	No ☐	Temp:_____	Sampled < 2hrs ☐
Water – VOA vials have zero headspace?	Yes ☐	No ☐	N/A ☑	
Water – pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	Checked by: _____
Water – Sulfides present in Cyanide samples?	Yes ☐	No☐	N/A ☑	
Samples considered Drinking Water for metal analysis?	Yes ☐	No☐	N/A ☑	

Client contacted: _____ Date contacted: _____ Person contacted: _____

Contacted by: _____ Regarding: _____

Corrective Action: _____

TRANSWEST GEOCHEM

3725 E. Atlanta Ave.
Phoenix, Arizona 85040
Phone: (602) 437-0330
Fax: (602) 437-0660

3860 S. Palo Verde Rd., Ste. 301
Tucson, Arizona 85714
Phone: (520) 573-1061
Fax: (520) 573-1063

Chain of Custody

TGI Work Order No: 0706 138

Date 6-7-07 Page 1 of 1

Project Manager:	Molly Collins
Client Name:	COT - ES
Address:	
City, State, Zip:	
Phone:	791-5414 Fax: 791-5415

Bill To:	COT - ES
Company:	
Address:	
City, State, Zip:	
Phone:	Fax:

P.O. No.:	
Project Name:	Toole
Project Number:	

SAMPLE RECEIPT

Temperature:	23.8°C	Ice:	
Received Intact:	Yes No N/A	Absent / Present	
Custody Seals:	Yes No N/A	Wet / Blue	
Total No. of Containers:	2	Sampled <2 hrs ago	

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Lab ID	No. of Containers	TPH, (8015AZR.1)	BTEX (8021B)	Volatile Organics GCMS (624/8260B)	SDWA Volatiles, (524.2)	Semi-Volatile Organics GCMS (625/8270)	Organochlorine Pesticides (608/8081)	PCB's, (8082)	PAH, EPA (8310)	8 RCRA Metals	Comments
Toole-060707-Int	Air	6-7-07	1315	01	1	X	X								
Toole-060707-Eff	Air	6-7-07	1330	02	1	X	X								

Relinquished by: (Signature)	(Print Name)	Received by: (Signature)	(Print Name)	Date / Time	
1	Tony Grieb	Keith Konola	Keith Konola	6/7/07	14:05
2 Kerri Collins	Kerri Collins		Express It	6/7/07	1500
3	Express It	Leslie May - TGI	Leslie May	6-8-07	0930

White copy to TGI, Yellow copy for final report, Pink copy to sampler

Revised: 3/6/06

TRANSWEST GEOCHEM

June 09, 2006

Alison Jones
City of Tucson, Environmental Services
100 N. Stone, 2nd Floor, W. Side
Tucson, AZ 85701

RECEIVED
JUN 12 2006
ENVIRONMENTAL SERVICES
100 N. STONE AVE., 2ND FLOOR

RE: Toole

Work Order No.: 0605385

Dear Alison,

Transwest Geochem, Inc. received 2 samples on 5/24/06. The results of the analyses are presented in the following report.

The Case Narrative of this report addresses any Quality Control and/or Quality Assurance issues associated with this Work Order.

If you have any questions regarding these test results, please feel free to call us at (602) 437-0330.

Sincerely,

Matt Hill
Project Manager

ADHS License No. AZM133/AZ0133

3725 E. Atlanta Avenue • Phoenix, Arizona 85040 • (602) 437-0330 • (800) 927-5183 • Fax (602) 437-0660
3860 S. Palo Verde Rd. • Suite 301 • Tucson, Arizona 85714 • (520) 573-1061 • Fax (520) [illegible]

TRANSWEST GEOCHEM

Client: City of Tucson, Environmental Services
Work Order: 0605385
Project Name: Toole
Project Number:

Date Printed: 09-Jun-06

Case Narrative

All method blanks, laboratory spikes, and/or matrix spikes met quality control objectives for the parameters associated with this Work Order except as detailed below or on the Data Qualifier page of this report. Data Qualifiers used in this report are in accordance with ADEQ Arizona Data Qualifiers, Revision 2.0 11/26/2003.

Data qualifiers ("flags") contained within this analytical report have been issued to explain a quality control deficiency, and do not affect the quality (validity) of the data unless noted otherwise in the case narrative.

Analytical Comments for Method 8021B/8015B, Sample 0605385-01, Batch 5GC8060526: Surrogate recovery was outside of TGI criteria due to matrix interference. The sample contained a high concentration of TVFHC.

3725 E. Atlanta Avenue • Phoenix, Arizona 85040 • (602) 437-0330 • (800) 927-5183 • Fax (602) 437-0660
3860 S. Palo Verde Rd. • Suite 301 • Tucson, Arizona 85714 • (520) 573-1061 • Fax (

Date Printed 08-Jun-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services

Project Name: Toole

Project Number:

Work Order: 0605385

Date Received: 24-May-06

Case Narrative
Data Qualifiers

One or more of the following data qualifiers may be associated with your analytical and/or quality control data.

D2	Sample required dilution due to high concentration of target analyte.
S10	Surrogate recovery was above laboratory and method acceptance limits. See Case Narrative.

TRANSWEST GEOCHEM

Date Printed 08-Jun-06
License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Project Name: Toole
Project Number:
Work Order: 0605385

Work Order Sample Summary

Client Sample ID	Lab Sample ID	Test Code	Collection Date	Date Received
Toole-052406-IN	0605385-01A	8021B/8015B	5/24/06 07:20 AM	5/24/06 08:15 AM
Toole-052406-EFF	0605385-02A	8021B/8015B	5/24/06 07:10 AM	5/24/06 08:15 AM

Date Printed 08-Jun-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services

Project Name: Toole

Project Number:

Work Order: 0605385

Date Received: 24-May-06

Definitions

Analytical Spike (AS)	The AS is a known amount of a target analyte added to a sample after it has been distilled, digested, or extracted and is ready for analysis. The AS is generally performed if the MS has failed. It is used to indicate interference that arises from sample distillation, digestion, or extraction as opposed to interference that is innate to the matrix.
Continuing Curve Verification (CCV)	The CCV is also referred to as a curve check. This is a standard analyzed at specified intervals during an analysis. The CCV verifies the stability and accuracy of the calibration curve. There are specific CCV recovery acceptance criteria for each method.
Dilution Factor (DF)	The DF is an indication of how much a sample had to be diluted in order to quantitate it on a standard curve. The DF is indicated in the reported sample result. The sample PQL increases as the dilution increases.
Internal Standard (IS)	The IS is a compound that is similar to the organic compound of interest in terms of chemical composition but is unique in that it is rare in the environment. The same concentration of IS is added to every sample for some organic methods.
Laboratory Control Sample (LCS)	The LCS is also referred to as a blank spike. The LCS is an addition of a known amount of a target analyte (from the same source as calibration standards or spikes) to an aliquot of deionized water or other appropriate clean matrix. The LCS is processed through the entire method procedure in the same manner as samples.
Matrix Spike (MS)	The MS is a known amount of a target analyte added to a sample. The MS is processed through the entire method procedure in the same manner as samples.
Method Blank (MB)	The MB is an aliquot of deionized water or other appropriate clean matrix that is thought to be free of the analyte in question. The MB is processed through the entire extraction or analysis procedure and is used to indicate contamination in the lab.
Method Detection Limit (MDL)	The MDL is the lowest level of detection of which a method is capable.
Practical Quantitation Limit (PQL)	The PQL is the lowest value at which Transwest Geochem can detect an analyte in matrix with a high degree of confidence. The PQL will increase as the DF increases. The PQL is greater than or equal to the MDL.
Relative Percent Difference (RPD)	The RPD is a measure of precision (the ability to obtain the same result on re-analysis of the same sample). It is calculated using the result of a sample, MS, LCS, or LCSV and its associated duplicate result.
Secondary Source QC Sample (LCSV)	The LCSV is also referred to as a second source laboratory control sample. It is the same type of standard as a calibration or spiking standard but is obtained from a different source. The LCSV is an indication of the primary standard quality, method performance, and instrument performance.
Surrogate	A surrogate compound is similar to the organic compound of interest in terms of chemical composition but is unique in that it is rare in the environment. When surrogates are used, they are added to every sample, blank and standard. Surrogate recovery is used as an indication of extraction and/or analytical success.
Trip Blank (TB)	The TB is a portion of deionized water preserved in the same manner as the samples. The TB travels from the lab, to the field, and then back to the lab with the samples from the field. The TB serves as an indication of contamination introduced during sample transportation.

TRANSWEST GEOCHEM

Date Printed 08-Jun-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Project Name: Toole
Project Number:
Work Order: 0605385
Date Received: 24-May-06

References

Transwest Geochem, Inc. uses the methods outlined in the following references:

Code of Federal Regulations, 40CFR, Part 136, Appendix A, 1998.

Standard Methods for the Examination of Water and Wastewater, 19th Edition, 1995.

Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Revised March 1983.

Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, Revised August 1993.

Methods for the Determination of Metals in Environmental Samples, Supplement 1: EPA/600/R-94/111, Revised May 1994.

Methods for the Determination of Organic Compounds in Drinking Water, EPA/600/4-88/039, Revised July, 1991; EPA-600/4-90/020, Supplement I, July 1990; EPA-600/R-92/129; Supplement II, August 1992; EPA-600/R-95/131, Supplement III, August 1995.

Hach, Water Analysis Handbook, 3rd Edition, 1997.

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition, 1986 including Update I, July 1992; Update IIA, August 1993; Update II; September 1994; Update IIB, January 1995; Update III, December 1996

Bureau of Laboratory Services, State of Arizona Department of Health Services Method 418.1AZ: TPH in Soil, September 1994.

Bureau of Laboratory Services, State of Arizona Department of Health Services Method 8015AZ.R1, September 1998. (Comment: C6-C10 GRO reported by this method is not to be used in compliance situations)

ASTM MethodD4982, Annual Book of ASTM Standards, Volumes 11.01 and 11.02, 1995

The Determination of Polychlorinated Biphenyls in Transformer Fluid and Waste Oils, EPA-600 4-81-045, September 1982.

TRANSWEST GEOCHEM

CLIENT: City of Tucson, Environmental Services
Work Order: 0605385
Lab ID: 0605385-01
Project Name: Toole
Project Number:

Date Printed 08-Jun-06
License No. AZM133/AZ0133
Client Sample ID: Toole-052406-IN
Collection Date: 5/24/2006 7:20:00 AM
Matrix: Air

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene	**19**	0.50		mg/m³	1.0	8021B/8015B	N/A	5/26/06	JPM	5GC8060526
Benzene-ppmv	**5.90**	0.16		ppmv	1.00	8021B/8015B	N/A	5/26/06	JPM	5GC8060526B
Toluene	**12**	1.0		mg/m³	1.0	8021B/8015B	N/A	5/26/06	JPM	5GC8060526
Toluene-ppmv	**3.27**	0.27		ppmv	1.00	8021B/8015B	N/A	5/26/06	JPM	5GC8060526B
Ethylbenzene	**20**	1.0		mg/m³	1.0	8021B/8015B	N/A	5/26/06	JPM	5GC8060526
Ethylbenzene-ppmv	**4.66**	0.23		ppmv	1.00	8021B/8015B	N/A	5/26/06	JPM	5GC8060526B
Xylenes, total	**91**	1.5		mg/m³	1.0	8021B/8015B	N/A	5/26/06	JPM	5GC8060526
Xylenes, total-ppmv	**21.09**	0.35		ppmv	1.00	8021B/8015B	N/A	5/26/06	JPM	5GC8060526B
TVFHC (C6-C10)	**1700**	500	D2	mg/m³	5.0	8021B/8015B	N/A	5/26/06	JPM	5GC8060526
TVFHC (C6-C10)-ppmv	**426.03**	120.00	D2	ppmv	5.00	8021B/8015B	N/A	5/26/06	JPM	5GC8060526B
Bromofluorobenzene(Surrogate)	141	70-130	S10	%REC	1.0	8021B/8015B	N/A	5/26/06	JPM	5GC8060526

TRANSWEST GEOCHEM

Date Printed 08-Jun-06

CLIENT: City of Tucson, Environmental Services

License No. AZM133/AZ0133

Work Order: 0605385

Client Sample ID: Toole-052406-EFF

Lab ID: 0605385-02

Collection Date: 5/24/2006 7:10:00 AM

Project Name: Toole

Matrix: Air

Project Number:

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene										
Benzene-ppmv	**4.5**	0.50		mg/m³	1.0	8021B/8015B	N/A	5/26/06	JPM	5GC8060526
Toluene	**1.40**	0.16		ppmv	1.00	8021B/8015B	N/A	5/26/06	JPM	5GC8060526B
Toluene-ppmv	**3.0**	1.0		mg/m³	1.0	8021B/8015B	N/A	5/26/06	JPM	5GC8060526
Ethylbenzene	**0.80**	0.27		ppmv	1.00	8021B/8015B	N/A	5/26/06	JPM	5GC8060526B
Ethylbenzene-ppmv	**1.3**	1.0		mg/m³	1.0	8021B/8015B	N/A	5/26/06	JPM	5GC8060526
Xylenes, total	**0.30**	0.23		ppmv	1.00	8021B/8015B	N/A	5/26/06	JPM	5GC8060526B
Xylenes, total-ppmv	**5.1**	1.5		mg/m³	1.0	8021B/8015B	N/A	5/26/06	JPM	5GC8060526
TVFHC (C6-C10)	**1.16**	0.35		ppmv	1.00	8021B/8015B	N/A	5/26/06	JPM	5GC8060526B
TVFHC (C6-C10)-ppmv	**100**	100		mg/m³	1.0	8021B/8015B	N/A	5/26/06	JPM	5GC8060526
Bromofluorobenzene(Surrogate)	**25.02**	24.00		ppmv	1.00	8021B/8015B	N/A	5/26/06	JPM	5GC8060526B
	108	70-130		%REC	1.0	8021B/8015B	N/A	5/26/06	JPM	5GC8060526

TRANSWEST GEOCHEM

Date: 08-Jun-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0605385
Project: Toole

QC SUMMARY REPORT

Method Blank

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene-ppmv	<0.16	0.16		ppmv	1	8021B/8015B	N/A	5/26/06	JPM	5GC8060526B
Toluene-ppmv	<0.27	0.27		ppmv	1	8021B/8015B	N/A	5/26/06	JPM	5GC8060526B
Ethylbenzene-ppmv	<0.23	0.23		ppmv	1	8021B/8015B	N/A	5/26/06	JPM	5GC8060526B
Xylenes, total-ppmv	<0.35	0.35		ppmv	1	8021B/8015B	N/A	5/26/06	JPM	5GC8060526B
TVFHC (C6-C10)-ppmv	<24.00	24.00		ppmv	1	8021B/8015B	N/A	5/26/06	JPM	5GC8060526B
Benzene	<0.50	0.50		mg/m³	1	8021B/8015B	N/A	5/26/06	JPM	5GC8060526
Toluene	<1.0	1.0		mg/m³	1	8021B/8015B	N/A	5/26/06	JPM	5GC8060526
Ethylbenzene	<1.0	1.0		mg/m³	1	8021B/8015B	N/A	5/26/06	JPM	5GC8060526
Xylenes, total	<1.5	1.5		mg/m³	1	8021B/8015B	N/A	5/26/06	JPM	5GC8060526
TVFHC (C6-C10)	<100	100		mg/m³	1	8021B/8015B	N/A	5/26/06	JPM	5GC8060526
Bromofluorobenzene	96	70-130		%REC	1	8021B/8015B	N/A	5/26/06	JPM	5GC8060526

TRANSWEST GEOCHEM

Date: 08-Jun-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0605385
Project: Toole

QC SUMMARY REPORT

Sample Duplicate

Analyte	Result	PQL	Units	RPD Ref Val	% RPD	RPD Limit	Test Code	Date Prepared	Date Analyzed	Analyst	Qual
Sample ID: **0605410-01AD**		Batch ID: 5GC8060526									
Client ID:											
Benzene	25.80	10	mg/m³	28.40	10%	30	8021B/8015B	N/A	5/26/06	JPM	
Toluene	358.6	20	mg/m³	316.8	12%	30	8021B/8015B	N/A	5/26/06	JPM	
Ethylbenzene	82.60	20	mg/m³	69.60	17%	30	8021B/8015B	N/A	5/26/06	JPM	
Xylenes, total	463	30	mg/m³	383.6	19%	30	8021B/8015B	N/A	5/26/06	JPM	
TVFHC (C6-C10)	6215	2000	mg/m³	5137	19%	30	8021B/8015B	N/A	5/26/06	JPM	

TRANSWEST GEOCHEM

Date: 08-Jun-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0605385
Project: Toole

QC SUMMARY REPORT

Blank Spike

Analyte	Result	PQL	SPK value	SPK Ref Val	% Rec	Low Limit	High Limit	RPD Ref Val	% RPD	RPD Limit	Qual
Sample ID: **LCS 5/26**	Batch ID: 5GC8060526			Test Code: 8021B/8015B				Date Analyzed: 05/26/06 00:00			
				Units: mg/m³				Date Prepared: N/A			
Benzene	4.720	0.50	5.000		94%	70	130				
Toluene	5.350	1.0	5.000		107%	70	130				
Ethylbenzene	5.340	1.0	5.000		107%	70	130				
Xylenes, total	15.88	1.5	15.00		106%	70	130				
TVFHC (C6-C10)	305.4	100	250.0		122%	70	130				
Bromofluorobenzene	10.09	0.50	10.00		101%	70	130				

Jeremy

TRANSWEST GEOCHEM

Sample Receipt Checklist

Client Name: 0605385

Work Order Number: Tucson-EMS

Checklist completed by: MR 5/24/06
Signature / Date

Matrix: Air Carrier Name: Client TGI Express IT

Date and Time Received: 5/24/06 1455

Checked by SH

Logged In by: SH 5/24/06
Initials / Date

Reviewed by: GP 5/26
Initials / Date

				COMMENTS
Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑	
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Container/Temp Blank temperature in compliance?	Yes ☐	No ☐	Temp: Amb	Sampled < 2hrs ☐
Water – VOA vials have zero headspace?	Yes ☐	No ☐	N/A ☑	
Water – pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	Checked by: MR
Water – Sulfides present in Cyanide samples?	Yes ☐	No ☐	N/A ☑	
Sample considered Drinking Water?	Yes ☐	No ☐	N/A ☑	

Client contacted: _____ Date contacted: _____ Person contacted: _____

Contacted by: _____ Regarding: _____

Corrective Action: _____

TRANSWEST GEOCHEM

Sample Receipt Checklist

Client Name: COT-E.S.

Date and Time Received: 5/24/06 08:15

Work Order Number: 0506385

Received by: Richard Mosher

Checklist completed by: [illegible] 5/24/06
Signature / Date

Logged In by: _____
Initials / Date

Matrix: Air

Carrier Name: Verdad

Reviewed by: _____
Initials / Date

				COMMENTS
Shipping container/cooler in good condition?	Yes ☐	No ☐	Not Present ☑	
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑	
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐	N/A ☐	
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	Temp: 26.2°C → Tedlar Bags	
Water – VOA vials have zero headspace?	Yes ☐	No ☐	N/A ☑	
Water – pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	
Water – Sulfides present in Cyanide samples?	Yes ☐	No ☐	N/A ☑	

Adjusted ? _____ Checked by: _____

Client contacted: _____ Date contacted: _____ Person contacted: _____

Contacted by: _____ Regarding: _____

Corrective Action: _____

TRANSWEST GEOCHEM
3725 E. Atlanta Ave., Ste 2
Phoenix, Arizona 85040
Phone: (602) 437-0330
Fax: (602) 437-0660

3860 S. Palo Verde Rd., Ste. 301
Tucson, Arizona 85714
Phone: (520) 573-1061
Fax: (520) 573-1063

Chain of Custody

TGI Work Order No: 0605385

Date 5 24.06 Page 1 of 1

Project Manager:	Molly Collins
Client Name:	COT - ENV
Address:	
City, State ZIP:	
Phone:	791-5414 Fax: -5415

Bill to:	COT - ENV
Company:	
Address:	
City, State ZIP:	
Phone:	Fax:

P.O. No.:	
Project Name:	TOOLE
Project Number:	

SAMPLE RECEIPT

Temperature:	Amb. 26.2°C	Ice:
Received Intact:	(Yes) No N/A	(Absent) / Present
Custody Seals:	Yes (No) N/A	Wet / Blue
Total No. of Containers:	2	

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Lab ID	No. of Containers	TPH, 8015AZR.1	BTEX (8021B)	Volatile Organics GCMS (624/8260AZ)	SDWA Volatiles, (524.2)	Semi-Volatile Organics GCMS (625/8270)	Organochlorine Pesticides (608/8081)	PCB's, (8082)	PAH, EPA 8310	8 RCRA Metals	Comments
Toole.052406.IN	Air	5.24.06	0720	01	1	X	X								
Toole.052406.EFF	Air	5.24.06	0710	02	1	X	X								

	Relinquished by: (Signature)	(Print Name)	Received by: (Signature)	(Print Name)	Date/Time
1	[signature]	Geno Fonshee	R Mosher	R Mosher	5/24/06 08:15
2	[signature]	Keith Kanola		Express It	5/24/06 10:30
3		Express It	[signature]	Sys Hauler	5/24/06 1455

White copy to TGI, Yellow copy for final report, Pink copy to sampler

Revised: 7/21/2004

TRANSWEST GEOCHEM

May 25, 2007

Alison Jones
City of Tucson, Environmental Services
100 N. Stone, 2nd Floor, W. Side
Tucson, AZ 85701

RE: Toole

Work Order No.: 0704730

Dear Alison,

Transwest Geochem, Inc. received 2 samples on 4/30/07. The results of the analyses are presented in the following report.

The Case Narrative of this report addresses any Quality Control and/or Quality Assurance issues associated with this Work Order.

If you have any questions regarding these test results, please feel free to call us at (602) 437-0330.

Sincerely,

Mary Dutton for

Marcia A. Smith
Project Manager

ADHS License No. AZM133/AZ0133

3725 E. Atlanta Avenue • Phoenix, Arizona 85040 • (602) 437-0330 • (800) 927-5183 • Fax (602) 437-0660
3860 S. Palo Verde Rd. • Suite 301 • Tucson, Arizona 85714 • (520) 573-1061 • Fax (520) 573-1063

100% Recycled

Client: City of Tucson, Environmental Services
Work Order: 0704730
Project Name: Toole
Project Number:

Date Printed: 25-May-07

Case Narrative

All method blanks, laboratory spikes, and/or matrix spikes met quality control objectives for the parameters associated with this Work Order except as detailed below or on the Data Qualifier page of this report. Data Qualifiers used in this report are in accordance with ADEQ Arizona Data Qualifiers, Revision 2.0 11/26/2003.

Data qualifiers ("flags") contained within this analytical report have been issued to explain a quality control deficiency, and do not affect the quality (validity) of the data unless noted otherwise in the case narrative.

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TRANSWEST GEOCHEM

Date Printed 10-May-07
License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Project Name: Toole
Project Number:
Work Order: 0704730

Work Order Sample Summary

Client Sample ID	Lab Sample ID	Test Code	Collection Date	Date Received
Toole-043007-Inf	0704730-01A	8021B/8015B	4/30/07 02:40 PM	4/30/07 03:10 PM
Toole-043007-Eff	0704730-02A	8021B/8015B	4/30/07 02:45 PM	4/30/07 03:10 PM

Date Printed 10-May-07

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Project Name: Toole
Project Number:
Work Order: 0704730
Date Received: 30-Apr-07

Definitions

Analytical Spike (AS)	The AS is a known amount of a target analyte added to a sample after it has been distilled, digested, or extracted and is ready for analysis. The AS is generally performed if the MS has failed. It is used to indicate interference that arises from sample distillation, digestion, or extraction as opposed to interference that is innate to the matrix.
Continuing Curve Verification (CCV)	The CCV is also referred to as a curve check. This is a standard analyzed at specified intervals during an analysis. The CCV verifies the stability and accuracy of the calibration curve. There are specific CCV recovery acceptance criteria for each method.
Dilution Factor (DF)	The DF is an indication of how much a sample had to be diluted in order to quantitate it on a standard curve. The DF is indicated in the reported sample result. The sample PQL increases as the dilution increases.
Internal Standard (IS)	The IS is a compound that is similar to the organic compound of interest in terms of chemical composition but is unique in that it is rare in the environment. The same concentration of IS is added to every sample for some organic methods.
Laboratory Control Sample (LCS)	The LCS is also referred to as a blank spike. The LCS is an addition of a known amount of a target analyte (from the same source as calibration standards or spikes) to an aliquot of deionized water or other appropriate clean matrix. The LCS is processed through the entire method procedure in the same manner as samples.
Matrix Spike (MS)	The MS is a known amount of a target analyte added to a sample. The MS is processed through the entire method procedure in the same manner as samples.
Method Blank (MB)	The MB is an aliquot of deionized water or other appropriate clean matrix that is thought to be free of the analyte in question. The MB is processed through the entire extraction or analysis procedure and is used to indicate contamination in the lab.
Method Detection Limit (MDL)	The MDL is the lowest level of detection of which a method is capable.
Practical Quantitation Limit (PQL)	The PQL is the lowest value at which Transwest Geochem can detect an analyte in matrix with a high degree of confidence. The PQL will increase as the DF increases. The PQL is greater than or equal to the MDL.
Relative Percent Difference (RPD)	The RPD is a measure of precision (the ability to obtain the same result on re-analysis of the same sample). It is calculated using the result of a sample, MS, LCS, or LCSV and its associated duplicate result.
Secondary Source QC Sample (LCSV)	The LCSV is also referred to as a second source laboratory control sample. It is the same type of standard as a calibration or spiking standard but is obtained from a different source. The LCSV is an indication of the primary standard quality, method performance, and instrument performance.
Surrogate	A surrogate compound is similar to the organic compound of interest in terms of chemical composition but is unique in that it is rare in the environment. When surrogates are used, they are added to every sample, blank and standard. Surrogate recovery is used as an indication of extraction and/or analytical success.
Trip Blank (TB)	The TB is a portion of deionized water preserved in the same manner as the samples. The TB travels from the lab, to the field, and then back to the lab with the samples from the field. The TB serves as an indication of contamination introduced during sample transportation.

Date Printed 10-May-07

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Project Name: Toole
Project Number:
Work Order: 0704730
Date Received: 30-Apr-07

References

Transwest Geochem, Inc. uses the methods outlined in the following references:

Code of Federal Regulations, 40CFR, Part 136, Appendix A, 1998.

Standard Methods for the Examination of Water and Wastewater, 19th Edition, 1995.

Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Revised March 1983.

Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, Revised August 1993.

Methods for the Determination of Metals in Environmental Samples, Supplement 1: EPA/600/R-94/111, Revised May 1994.

Methods for the Determination of Organic Compounds in Drinking Water, EPA/600/4-88/039, Revised July, 1991; EPA-600/4-90/020, Supplement I, July 1990; EPA-600/R-92/129; Supplement II, August 1992; EPA-600/R-95/131, Supplement III, August 1995.

Hach, Water Analysis Handbook, 3rd Edition, 1997.

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition, 1986 including Update I, July 1992; Update IIA, August 1993; Update II; September 1994; Update IIB, January 1995; Update III, December 1996

Bureau of Laboratory Services, State of Arizona Department of Health Services Method 418.1AZ: TPH in Soil, September 1994.

Bureau of Laboratory Services, State of Arizona Department of Health Services Method 8015AZ.R1, September 1998. (Comment: C6-C10 GRO reported by this method is not to be used in compliance situations)

ASTM MethodD4982, Annual Book of ASTM Standards, Volumes 11.01 and 11.02, 1995

The Determination of Polychlorinated Biphenyls in Transformer Fluid and Waste Oils, EPA-600 4-81-045, September 1982.

TRANSWEST GEOCHEM

Date Printed 25-May-07

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0704730
Lab ID: 0704730-01
Project Name: Toole
Project Number:

Client Sample ID: Toole-043007-Inf
Collection Date: 4/30/2007 2:40:00 PM
Matrix: Air

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene	**1.8**	0.50		mg/m³	1.0	8021B/8015B	N/A	5/2/07	MO	F070502
Benzene-ppmv	**0.56**	0.16		ppmv	1.00	8021B/8015B	N/A	5/2/07	MO	F070502B
Toluene	**2.2**	1.0		mg/m³	1.0	8021B/8015B	N/A	5/2/07	MO	F070502
Toluene-ppmv	**0.58**	0.27		ppmv	1.00	8021B/8015B	N/A	5/2/07	MO	F070502B
Ethylbenzene	**1.6**	1.0		mg/m³	1.0	8021B/8015B	N/A	5/2/07	MO	F070502
Ethylbenzene-ppmv	**0.37**	0.23		ppmv	1.00	8021B/8015B	N/A	5/2/07	MO	F070502B
Xylenes, total	**7.1**	1.5		mg/m³	1.0	8021B/8015B	N/A	5/2/07	MO	F070502
Xylenes, total-ppmv	**1.64**	0.35		ppmv	1.00	8021B/8015B	N/A	5/2/07	MO	F070502B
TVFHC (C6-C10)	**500**	100		mg/m³	1.0	8021B/8015B	N/A	5/2/07	MO	F070502
TVFHC (C6-C10)-ppmv	**122.98**	24.00		ppmv	1.00	8021B/8015B	N/A	5/2/07	MO	F070502B
Bromofluorobenzene(Surrogate)	91	56-140		%REC	1.0	8021B/8015B	N/A	5/2/07	MO	F070502

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TRANSWEST GEOCHEM

Date Printed 10-May-07

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0704730
Lab ID: 0704730-02
Project Name: Toole
Project Number:

Client Sample ID: Toole-043007-Eff
Collection Date: 4/30/2007 2:45:00 PM
Matrix: Air

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene	<0.50	0.50		mg/m³	1.0	8021B/8015B	N/A	5/2/07	MO	F070502
Benzene-ppmv	<0.16	0.16		ppmv	1.00	8021B/8015B	N/A	5/2/07	MO	F070502B
Toluene	<1.0	1.0		mg/m³	1.0	8021B/8015B	N/A	5/2/07	MO	F070502
Toluene-ppmv	<0.27	0.27		ppmv	1.00	8021B/8015B	N/A	5/2/07	MO	F070502B
Ethylbenzene	<1.0	1.0		mg/m³	1.0	8021B/8015B	N/A	5/2/07	MO	F070502
Ethylbenzene-ppmv	<0.23	0.23		ppmv	1.00	8021B/8015B	N/A	5/2/07	MO	F070502B
Xylenes, total	<1.5	1.5		mg/m³	1.0	8021B/8015B	N/A	5/2/07	MO	F070502
Xylenes, total-ppmv	<0.35	0.35		ppmv	1.00	8021B/8015B	N/A	5/2/07	MO	F070502B
TVFHC (C6-C10)	<100	100		mg/m³	1.0	8021B/8015B	N/A	5/2/07	MO	F070502
TVFHC (C6-C10)-ppmv	<24.00	24.00		ppmv	1.00	8021B/8015B	N/A	5/2/07	MO	F070502B
Bromofluorobenzene(Surrogate)	99	56-140		%REC	1.0	8021B/8015B	N/A	5/2/07	MO	F070502

TRANSWEST GEOCHEM

Date: 10-May-07

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0704730
Project: Toole

QC SUMMARY REPORT

Method Blank

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene-ppmv	<0.16	0.16		ppmv	1	8021B/8015B	N/A	5/2/07	MO	F070502B
Toluene-ppmv	<0.27	0.27		ppmv	1	8021B/8015B	N/A	5/2/07	MO	F070502B
Ethylbenzene-ppmv	<0.23	0.23		ppmv	1	8021B/8015B	N/A	5/2/07	MO	F070502B
Xylenes, total-ppmv	<0.35	0.35		ppmv	1	8021B/8015B	N/A	5/2/07	MO	F070502B
TVFHC (C6-C10)-ppmv	<24.00	24.00		ppmv	1	8021B/8015B	N/A	5/2/07	MO	F070502B
Benzene	<0.50	0.50		mg/m³	1	8021B/8015B	N/A	5/2/07	MO	F070502
Toluene	<1.0	1.0		mg/m³	1	8021B/8015B	N/A	5/2/07	MO	F070502
Ethylbenzene	<1.0	1.0		mg/m³	1	8021B/8015B	N/A	5/2/07	MO	F070502
Xylenes, total	<1.5	1.5		mg/m³	1	8021B/8015B	N/A	5/2/07	MO	F070502
TVFHC (C6-C10)	<100	100		mg/m³	1	8021B/8015B	N/A	5/2/07	MO	F070502
Bromofluorobenzene	99	56-140		%REC	1	8021B/8015B	N/A	5/2/07	MO	F070502

TRANSWEST GEOCHEM

Date: 10-May-07

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0704730
Project: Toole

QC SUMMARY REPORT

Sample Duplicate

Analyte	Result	PQL	Units	RPD Ref Val	% RPD	RPD Limit	Test Code	Date Prepared	Date Analyzed	Analyst	Qual
Sample ID: **0704730-01AD**		Batch ID: F070502									
Client ID: **Toole-043007-Inf**											
Benzene	2.000	0.50	mg/m³	1.800	11%	30	8021B/8015B	N/A	5/2/07	MO	
Toluene	2.300	1.0	mg/m³	2.200	4%	30	8021B/8015B	N/A	5/2/07	MO	
Ethylbenzene	1.400	1.0	mg/m³	1.600	13%	30	8021B/8015B	N/A	5/2/07	MO	
Xylenes, total	8.611	1.5	mg/m³	7.117	19%	30	8021B/8015B	N/A	5/2/07	MO	
TVFHC (C6-C10)	537.0	100	mg/m³	503.0	7%	30	8021B/8015B	N/A	5/2/07	MO	

TRANSWEST GEOCHEM

Date: 10-May-07

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0704730
Project: Toole

QC SUMMARY REPORT

Blank Spike

Analyte	Result	PQL	SPK value	SPK Ref Val	% Rec	Low Limit	High Limit	RPD Ref Val	% RPD	RPD Limit	Qual
Sample ID: **LCS 4/7**	Batch ID: F070502			Test Code: 8021B/8015B				Date Analyzed: 05/02/07 00:00			
				Units: mg/m³				Date Prepared: N/A			
Benzene	5.300	0.50	5.000		106%	70	130				
Toluene	5.000	1.0	5.000		100%	70	130				
Ethylbenzene	5.000	1.0	5.000		100%	70	130				
Xylenes, total	15.128	1.5	15.00		101%	70	130				
TVFHC (C6-C10)	249.6	100	250.0		100%	56	135				
Bromofluorobenzene	10.20	0.50	10.00		102%	56	140				

Storage Location: ML
Tedlar

TRANSWEST GEOCHEM

Sample Receipt Checklist

Client Name: City of Tucson

Date and Time Received: 5-1-07 0935

Work Order Number: 0704730

Checked by: Y

Checklist completed by: [signature] 5-1-07
Signature / Date

Logged In by: [initials] 5.1.07
Initials / Date

Matrix: Air

Carrier Name: Client TGI Express It

Reviewed by: [initials] 5/5/07
Initials / Date

				COMMENTS
Shipping container/cooler in good condition?	Yes ☒	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☒	
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☒	
Chain of custody present?	Yes ☒	No ☐		
Chain of custody signed when relinquished and received?	Yes ☒	No ☐		
Chain of custody agrees with sample labels?	Yes ☒	No ☐		
Samples in proper container/bottle?	Yes ☒	No ☐		
Sample containers intact?	Yes ☒	No ☐		
Sufficient sample volume for indicated test?	Yes ☒	No ☐		
All samples received within holding time?	Yes ☒	No ☐		
Container/Temp Blank temperature in compliance?	Yes ☒	No ☐	Temp: Amb	Sampled < 2hrs ☐
Water – VOA vials have zero headspace?	Yes ☐	No ☐	N/A ☒	
Water – pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☒	Checked by: _____
Water – Sulfides present in Cyanide samples?	Yes ☐	No ☐	N/A ☒	
Samples considered Drinking Water for metal analysis?	Yes ☐	No ☐	N/A ☒	

Client contacted: _____ Date contacted: _____ Person contacted: _____

Contacted by: _____ Regarding: _____

Corrective Action: _____

TRANSWEST GEOCHEM

Sample Receipt Checklist

Client Name: COT- ES

Date and Time Received: 4/30/07 15:10

Work Order Number: 0704730

Received by: Kerri Collins

Checklist completed by: Kerri Collins 4/30/07
Signature / Date

Logged In by: _____
Initials / Date

Matrix: Air

Carrier Name: Client

Reviewed by: _____
Initials / Date

				COMMENTS
Shipping container/cooler in good condition?	~~Yes ☒~~ KC	No ☐	Not Present ☒	
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☒	
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☒	
Chain of custody present?	Yes ☒	No ☐		
Chain of custody signed when relinquished and received?	Yes ☒	No ☐		
Chain of custody agrees with sample labels?	Yes ☒	No ☐		
Samples in proper container/bottle?	Yes ☒	No ☐	N/A ☐	
Sample containers intact?	Yes ☒	No ☐		
Sufficient sample volume for indicated test?	Yes ☒	No ☐		
All samples received within holding time?	Yes ☒	No ☐		
Container/Temp Blank temperature in compliance?	Yes ☒	No ☐	Temp: 26.6	* Air Samples
Water – VOA vials have zero headspace?	Yes ☐	No ☐	N/A ☒	
Water – pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☒	
Water – Sulfides present in Cyanide samples?	Yes ☐	No ☐	N/A ☒	

Adjusted ? _____ Checked by: _____

Client contacted: _____ Date contacted: _____ Person contacted: _____

Contacted by: _____ Regarding: _____

Corrective Action: _____

TRANSWEST GEOCHEM

3725 E. Atlanta Ave.
Phoenix, Arizona 85040
Phone: (602) 437-0330
Fax: (602) 437-0660

3860 S. Palo Verde Rd., Ste. 301
Tucson, Arizona 85714
Phone: (520) 573-1061
Fax: (520) 573-1063

Chain of Custody

TGI Work Order No: 0704730

Date 4-30-07 Page 1 of 1

Project Manager:	Molly Collins
Client Name:	CDH - ES
Address:	
City, State, Zip:	
Phone:	791-5414 Fax: 791-5417

Bill To:	
Company:	
Address:	
City, State, Zip:	
Phone:	Fax:

P.O. No.:	
Project Name:	Toole
Project Number:	

SAMPLE RECEIPT

Temperature:	26.6°C	Ice:	
Received Intact:	(Yes) No N/A	Absent / Present	
Custody Seals:	Yes (No) N/A	Wet / Blue	
Total No. of Containers:	2	Sampled <2 hrs ago	

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Lab ID	No. of Containers	TPH, (8015AZR.1)	BTEX (8021B)	Volatile Organics GCMS (624/8260B)	SDWA Volatiles, (524.2)	Semi-Volatile Organics GCMS (625/8270)	Organochlorine Pesticides (608/8081)	PCB's, (8082)	PAH, EPA (8310)	8 RCRA Metals	Comments
Toole-043007-Int	Air	4-30-07	1440	01	1	X	X								
Toole 043007-Eff	Air	4-30-07	1445	02	1	X	X								

Relinquished by: (Signature)	(Print Name)	Received by: (Signature)	(Print Name)	Date / Time
1 [illegible]	Tony [illegible]	Kerri Collins	Kerri Collins	4/30/07
2 Kerri Collins	Kerri Collins		Express It	4/30/07
3	Express It	Tracey [illegible]	Tracey Mitchell	5-1-07 0935

White copy to TGI, Yellow copy for final report, Pink copy to sampler

Revised: 3/6/06

TRANSWEST GEOCHEM

May 15, 2006

Alison Jones
City of Tucson, Environmental Services
100 N. Stone, 2nd Floor, W. Side
Tucson, AZ 85701

RECEIVED
MAY 18 2006
ENVIRONMENTAL SERVICES
100 N. STONE AVE., 2ND FLOOR

RE: Toole

Work Order No.: 0604682

Dear Alison,

Transwest Geochem, Inc. received 2 samples on 4/27/06. The results of the analyses are presented in the following report.

The Case Narrative of this report addresses any Quality Control and/or Quality Assurance issues associated with this Work Order.

If you have any questions regarding these test results, please feel free to call us at (602) 437-0330.

Sincerely,

Elizabeth Proffitt

Beth Proffitt
Project Manager

ADHS License No. AZM133/AZ0133

3725 E. Atlanta Avenue • Phoenix, Arizona 85040 • (602) 437-0330 • (800) 927-5183 • Fax (602) 437-0660
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TRANSWEST GEOCHEM

Client: City of Tucson, Environmental Services
Work Order: 0604682
Project Name: Toole
Project Number:

Date Printed: 15-May-06

Case Narrative

All method blanks, laboratory spikes, and/or matrix spikes met quality control objectives for the parameters associated with this Work Order except as detailed below or on the Data Qualifier page of this report. Data Qualifiers used in this report are in accordance with ADEQ Arizona Data Qualifiers, Revision 2.0 11/26/2003.

Data qualifiers ("flags") contained within this analytical report have been issued to explain a quality control deficiency, and do not affect the quality (validity) of the data unless noted otherwise in the case narrative.

S10 Footnote: The surrogate is elevated in sample Toole-042706-In due to the presence of matrix interferences.

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Date Printed 15-May-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services

Project Name: Toole

Project Number:

Work Order: 0604682

Date Received: 27-Apr-06

Case Narrative
Data Qualifiers

One or more of the following data qualifiers may be associated with your analytical and/or quality control data.

D1	Sample required dilution due to matrix.
D2	Sample required dilution due to high concentration of target analyte.
S10	Surrogate recovery was above laboratory and method acceptance limits. See Case Narrative.

TRANSWEST GEOCHEM

Date Printed 15-May-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services

Project Name: Toole

Project Number:

Work Order: 0604682

Work Order Sample Summary

Client Sample ID	Lab Sample ID	Test Code	Collection Date	Date Received
Toole-042706-In	0604682-01A	8021B/8015B	4/27/06 07:20 AM	4/27/06 08:45 AM
Toole-042706-Eff	0604682-02A	8021B/8015B	4/27/06 07:25 AM	4/27/06 08:45 AM

Date Printed 15-May-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services

Project Name: Toole

Project Number:

Work Order: 0604682

Date Received: 27-Apr-06

Definitions

Analytical Spike (AS)	The AS is a known amount of a target analyte added to a sample after it has been distilled, digested, or extracted and is ready for analysis. The AS is generally performed if the MS has failed. It is used to indicate interference that arises from sample distillation, digestion, or extraction as opposed to interference that is innate to the matrix.
Continuing Curve Verification (CCV)	The CCV is also referred to as a curve check. This is a standard analyzed at specified intervals during an analysis. The CCV verifies the stability and accuracy of the calibration curve. There are specific CCV recovery acceptance criteria for each method.
Dilution Factor (DF)	The DF is an indication of how much a sample had to be diluted in order to quantitate it on a standard curve. The DF is indicated in the reported sample result. The sample PQL increases as the dilution increases.
Internal Standard (IS)	The IS is a compound that is similar to the organic compound of interest in terms of chemical composition but is unique in that it is rare in the environment. The same concentration of IS is added to every sample for some organic methods.
Laboratory Control Sample (LCS)	The LCS is also referred to as a blank spike. The LCS is an addition of a known amount of a target analyte (from the same source as calibration standards or spikes) to an aliquot of deionized water or other appropriate clean matrix. The LCS is processed through the entire method procedure in the same manner as samples.
Matrix Spike (MS)	The MS is a known amount of a target analyte added to a sample. The MS is processed through the entire method procedure in the same manner as samples.
Method Blank (MB)	The MB is an aliquot of deionized water or other appropriate clean matrix that is thought to be free of the analyte in question. The MB is processed through the entire extraction or analysis procedure and is used to indicate contamination in the lab.
Method Detection Limit (MDL)	The MDL is the lowest level of detection of which a method is capable.
Practical Quantitation Limit (PQL)	The PQL is the lowest value at which Transwest Geochem can detect an analyte in matrix with a high degree of confidence. The PQL will increase as the DF increases. The PQL is greater than or equal to the MDL.
Relative Percent Difference (RPD)	The RPD is a measure of precision (the ability to obtain the same result on re-analysis of the same sample). It is calculated using the result of a sample, MS, LCS, or LCSV and its associated duplicate result.
Secondary Source QC Sample (LCSV)	The LCSV is also referred to as a second source laboratory control sample. It is the same type of standard as a calibration or spiking standard but is obtained from a different source. The LCSV is an indication of the primary standard quality, method performance, and instrument performance.
Surrogate	A surrogate compound is similar to the organic compound of interest in terms of chemical composition but is unique in that it is rare in the environment. When surrogates are used, they are added to every sample, blank and standard. Surrogate recovery is used as an indication of extraction and/or analytical success.
Trip Blank (TB)	The TB is a portion of deionized water preserved in the same manner as the samples. The TB travels from the lab, to the field, and then back to the lab with the samples from the field. The TB serves as an indication of contamination introduced during sample transportation.

CLIENT: City of Tucson, Environmental Services
Project Name: Toole
Project Number:
Work Order: 0604682
Date Received: 27-Apr-06

References

Transwest Geochem, Inc. uses the methods outlined in the following references:

Code of Federal Regulations, 40CFR, Part 136, Appendix A, 1998.

Standard Methods for the Examination of Water and Wastewater, 19th Edition, 1995.

Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Revised March 1983.

Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, Revised August 1993.

Methods for the Determination of Metals in Environmental Samples, Supplement 1: EPA/600/R-94/111, Revised May 1994.

Methods for the Determination of Organic Compounds in Drinking Water, EPA/600/4-88/039, Revised July, 1991; EPA-600/4-90/020, Supplement I, July 1990; EPA-600/R-92/129; Supplement II, August 1992; EPA-600/R-95/131, Supplement III, August 1995.

Hach, Water Analysis Handbook, 3rd Edition, 1997.

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition, 1986 including Update I, July 1992; Update IIA, August 1993; Update II; September 1994; Update IIB, January 1995; Update III, December 1996

Bureau of Laboratory Services, State of Arizona Department of Health Services Method 418.1AZ: TPH in Soil, September 1994.

Bureau of Laboratory Services, State of Arizona Department of Health Services Method 8015AZ.R1, September 1998. (Comment: C6-C10 GRO reported by this method is not to be used in compliance situations)

ASTM MethodD4982, Annual Book of ASTM Standards, Volumes 11.01 and 11.02, 1995

The Determination of Polychlorinated Biphenyls in Transformer Fluid and Waste Oils, EPA-600 4-81-045, September 1982.

TRANSWEST GEOCHEM

Date Printed 15-May-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0604682
Lab ID: 0604682-01
Project Name: Toole
Project Number:

Client Sample ID: Toole-042706-In
Collection Date: 4/27/2006 7:20:00 AM
Matrix: Air

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene	**16**	1.0	D1	mg/m³	2.0	8021B/8015B	4/28/06	4/28/06	SS	6GC14060428
Benzene-ppmv	**4.98**	0.32	D1	ppmv	2.00	8021B/8015B	4/28/06	4/28/06	SS	6GC14060428B
Toluene	**21**	2.0	D1	mg/m³	2.0	8021B/8015B	4/28/06	4/28/06	SS	6GC14060428
Toluene-ppmv	**5.50**	0.54	D1	ppmv	2.00	8021B/8015B	4/28/06	4/28/06	SS	6GC14060428B
Ethylbenzene	**32**	2.0	D1	mg/m³	2.0	8021B/8015B	4/28/06	4/28/06	SS	6GC14060428
Ethylbenzene-ppmv	**7.32**	0.46	D1	ppmv	2.00	8021B/8015B	4/28/06	4/28/06	SS	6GC14060428B
Xylenes, total	**130**	3.0	D1	mg/m³	2.0	8021B/8015B	4/28/06	4/28/06	SS	6GC14060428
Xylenes, total-ppmv	**30.22**	0.70	D1	ppmv	2.00	8021B/8015B	4/28/06	4/28/06	SS	6GC14060428B
TVFHC (C6-C10)	**1700**	200	D2	mg/m³	2.0	8021B/8015B	4/28/06	4/28/06	SS	6GC14060428
TVFHC (C6-C10)-ppmv	**426.94**	48.00	D2	ppmv	2.00	8021B/8015B	4/28/06	4/28/06	SS	6GC14060428B
Bromofluorobenzene(Surrogate)	154	70-130	S10	%REC	2.0	8021B/8015B	4/28/06	4/28/06	SS	6GC14060428

TRANSWEST GEOCHEM

Date Printed 15-May-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0604682
Lab ID: 0604682-02
Project Name: Toole
Project Number:

Client Sample ID: Toole-042706-Eff
Collection Date: 4/27/2006 7:25:00 AM
Matrix: Air

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene	<0.50	0.50		mg/m³	1.0	8021B/8015B	4/28/06	4/28/06	SS	6GC14060428
Benzene-ppmv	<0.16	0.16		ppmv	1.00	8021B/8015B	4/28/06	4/28/06	SS	6GC14060428B
Toluene	**1.3**	1.0		mg/m³	1.0	8021B/8015B	4/28/06	4/28/06	SS	6GC14060428
Toluene-ppmv	**0.35**	0.27		ppmv	1.00	8021B/8015B	4/28/06	4/28/06	SS	6GC14060428B
Ethylbenzene	<1.0	1.0		mg/m³	1.0	8021B/8015B	4/28/06	4/28/06	SS	6GC14060428
Ethylbenzene-ppmv	<0.23	0.23		ppmv	1.00	8021B/8015B	4/28/06	4/28/06	SS	6GC14060428B
Xylenes, total	<1.5	1.5		mg/m³	1.0	8021B/8015B	4/28/06	4/28/06	SS	6GC14060428
Xylenes, total-ppmv	<0.35	0.35		ppmv	1.00	8021B/8015B	4/28/06	4/28/06	SS	6GC14060428B
TVFHC (C6-C10)	<100	100		mg/m³	1.0	8021B/8015B	4/28/06	4/28/06	SS	6GC14060428
TVFHC (C6-C10)-ppmv	<24.00	24.00		ppmv	1.00	8021B/8015B	4/28/06	4/28/06	SS	6GC14060428B
Bromofluorobenzene(Surrogate)	111	70-130		%REC	1.0	8021B/8015B	4/28/06	4/28/06	SS	6GC14060428

TRANSWEST GEOCHEM

Date: 15-May-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services

Work Order: 0604682

Project: Toole

QC SUMMARY REPORT

Method Blank

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene-ppmv	<0.16	0.16		ppmv	1	8021B/8015B	4/28/06	4/28/06	SS	6GC14060428B
Toluene-ppmv	<0.27	0.27		ppmv	1	8021B/8015B	4/28/06	4/28/06	SS	6GC14060428B
Ethylbenzene-ppmv	<0.23	0.23		ppmv	1	8021B/8015B	4/28/06	4/28/06	SS	6GC14060428B
Xylenes, total-ppmv	<0.35	0.35		ppmv	1	8021B/8015B	4/28/06	4/28/06	SS	6GC14060428B
TVFHC (C6-C10)-ppmv	<24.00	24.00		ppmv	1	8021B/8015B	4/28/06	4/28/06	SS	6GC14060428B
Benzene	<0.50	0.50		mg/m³	1	8021B/8015B	4/28/06	4/28/06	SS	6GC14060428
Toluene	<1.0	1.0		mg/m³	1	8021B/8015B	4/28/06	4/28/06	SS	6GC14060428
Ethylbenzene	<1.0	1.0		mg/m³	1	8021B/8015B	4/28/06	4/28/06	SS	6GC14060428
Xylenes, total	<1.5	1.5		mg/m³	1	8021B/8015B	4/28/06	4/28/06	SS	6GC14060428
TVFHC (C6-C10)	<100	100		mg/m³	1	8021B/8015B	4/28/06	4/28/06	SS	6GC14060428
Bromofluorobenzene	111	70-130		%REC	1	8021B/8015B	4/28/06	4/28/06	SS	6GC14060428

TRANSWEST GEOCHEM

Date: 15-May-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0604682
Project: Toole

QC SUMMARY REPORT

Sample Duplicate

Analyte	Result	PQL	Units	RPD Ref Val	% RPD	RPD Limit	Test Code	Date Prepared	Date Analyzed	Analyst	Qual
Sample ID: **0604682-01AD**		Batch ID:	6GC14060428								
Client ID: **Toole-042706-In**											
Benzene	16.15	1.0	mg/m³	15.90	2%	30	8021B/8015B	4/28/06	4/28/06	SS	
Toluene	21.10	2.0	mg/m³	20.69	2%	30	8021B/8015B	4/28/06	4/28/06	SS	
Ethylbenzene	31.85	2.0	mg/m³	31.71	0%	30	8021B/8015B	4/28/06	4/28/06	SS	
Xylenes, total	132.17	3.0	mg/m³	131.1	1%	30	8021B/8015B	4/28/06	4/28/06	SS	
TVFHC (C6-C10)	1753	200	mg/m³	1746	0%	30	8021B/8015B	4/28/06	4/28/06	SS	

TRANSWEST GEOCHEM

Date: 15-May-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0604682
Project: Toole

QC SUMMARY REPORT

Blank Spike

Analyte	Result	PQL	SPK value	SPK Ref Val	% Rec	Low Limit	High Limit	RPD Ref Val	% RPD	RPD Limit	Qual
Sample ID: **LCS 4/28**	Batch ID: 6GC14060428			Test Code: 8021B/8015B				Date Analyzed: 04/28/06 00:00			
				Units: mg/m³				Date Prepared: 4/28/06			
Benzene	4.600	0.50	5.000		92%	70	130				
Toluene	4.600	1.0	5.000		92%	70	130				
Ethylbenzene	4.000	1.0	5.000		80%	70	130				
Xylenes, total	11.819	1.5	15.00		79%	70	130				
TVFHC (C6-C10)	179.5	100	250.0		72%	70	130				
Bromofluorobenzene	11.20	0.50	10.00		112%	70	130				

TRANSWEST GEOCHEM

Sample Receipt Checklist

Client Name: City of Tucson

Work Order Number: 0604682

Checklist completed by: Leslie May
Signature / Date

Date and Time Received: 4/27/06 1640

Checked by: lm

Logged In by: lm 4/27/06
Initials / Date

Matrix: Air Carrier Name: Client TGI Az Shuttle Reviewed by: GP 4/30
Initials / Date

				COMMENTS
Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑	
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Container/Temp Blank temperature in compliance?	Yes ☐	No ☐	Temp: Amb	Sampled < 2hrs ☐
Water – VOA vials have zero headspace?	Yes ☐	No ☐	N/A ☑	
Water – pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	Checked by: _____
Water – Sulfides present in Cyanide samples?	Yes ☐	No ☐	N/A ☑	
Sample considered Drinking Water?	Yes ☐	No ☐	N/A ☑	

Client contacted: _____ Date contacted: _____ Person contacted: _____

Contacted by: _____ Regarding: _____

Corrective Action: _____

TRANSWEST GEOCHEM

Sample Receipt Checklist

Client Name: COT - Env. SVCS.

Date and Time Received: 4/27/06 8:45

Work Order Number: 0604682

Received by: Richard Mosher

Checklist completed by: Lori Collins 4/27/06
Signature / Date

Logged In by: _____
Initials / Date

Matrix: Air

Carrier Name: Client

Reviewed by: _____
Initials / Date

				COMMENTS
Shipping container/cooler in good condition?	Yes ☒	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☒	
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☒	
Chain of custody present?	Yes ☒	No ☐		
Chain of custody signed when relinquished and received?	Yes ☒	No ☐		
Chain of custody agrees with sample labels?	Yes ☒	No ☐		
Samples in proper container/bottle?	Yes ☒	No ☐	N/A ☐	
Sample containers intact?	Yes ☒	No ☐		
Sufficient sample volume for indicated test?	Yes ☒	No ☐		
All samples received within holding time?	Yes ☒	No ☐		
Container/Temp Blank temperature in compliance?	Yes ☒	No ☐	Temp: Ambient	
Water – VOA vials have zero headspace?	Yes ☐	No ☐	N/A ☒	
Water – pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☒	
Water – Sulfides present in Cyanide samples?	Yes ☐	No ☐	N/A ☒	

Adjusted ? _____ Checked by: _____

Client contacted: _____ Date contacted: _____ Person contacted: _____

Contacted by: _____ Regarding: _____

Corrective Action: _____

TRANSWEST GEOCHEM

3725 E. Atlanta Ave., Ste 2
Phoenix, Arizona 85040
Phone: (602) 437-0330
Fax: (602) 437-0660

3860 S. Palo Verde Rd., Ste. 301
Tucson, Arizona 85714
Phone: (520) 573-1061
Fax: (520) 573-1063

Chain of Custody

TGI Work Order No: 0604 1682

Date 4.27.06 Page 1 of 1

Project Manager:	Molly Collins
Client Name:	COT-ENV SVCS
Address:	
City, State ZIP:	
Phone:	791 5414 Fax: - 5417

Bill to:	COT-ENV SVCS
Company:	
Address:	
City, State ZIP:	
Phone:	Fax:

P.O. No.:	
Project Name:	Toole
Project Number:	

SAMPLE RECEIPT

Temperature:	Amb.	Ice:	
Received Intact:	(Yes) No N/A	(Absent) Present	
Custody Seals:	Yes (No) N/A	Wet / Blue	
Total No. of Containers:	2		

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Lab ID	No. of Containers	TPH, 8015AZR.1	BTEX (8021B)	Volatile Organics GCMS (624/8260AZ)	SDWA Volatiles, (524.2)	Semi-Volatile Organics GCMS (625/8270)	Organochlorine Pesticides (608/8081)	PCB's, (8082)	PAH, EPA 8310	8 RCRA Metals	Comments
Toole.042706.IN	AIR	4.27.06	0720	01	1	X	X								
Toole.042706.EFF	AIR	4.27.06	0729	02	1	X	X								

Relinquished by: (Signature)	(Print Name)	Received by: (Signature)	(Print Name)	Date/Time
1	Gene Forshner	R. Mosher	R MOSHER	4/27/06 08:45
2	Keith Kanola		AZ Shuttle	4/27/06 13:00
3	AZ Shuttle	Leslie May	Leslie May	4-27-06 1640

temp: Amb

White copy to TGI, Yellow copy for final report, Pink copy to sampler

Revised: 7/21/2004

TRANSWEST GEOCHEM

April 24, 2006

Nancy Petersen
City of Tucson, Environmental Services
100 N. Stone, 2nd Floor, W. Side
Tucson, AZ 85701

RECEIVED
APR 26 2006
ENVIRONMENTAL SERVICES
100 N. STONE AVE., 2ND FLOOR

RE: Toole

Work Order No.: 0603555

Dear Nancy,

Transwest Geochem, Inc. received 2 samples on 3/30/06. The results of the analyses are presented in the following report.

The Case Narrative of this report addresses any Quality Control and/or Quality Assurance issues associated with this Work Order.

If you have any questions regarding these test results, please feel free to call us at (602) 437-0330.

Sincerely,

Beth Proffitt
Project Manager

ADHS License No. AZM133/AZ0133

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TRANSWEST GEOCHEM

Client: City of Tucson, Environmental Services
Work Order: 0603555
Project Name: Toole
Project Number:

Date Printed: 24-Apr-06

Case Narrative

All method blanks, laboratory spikes, and sample duplicates met quality control objectives for the parameters associated with this Work Order except as detailed below or on the Data Qualifier page of this report. Data Qualifiers used in this report are in accordance with ADEQ Arizona Data Qualifiers, Revision 1.0 05/13/2002.

Data qualifiers ("flags") contained within this analytical report have been issued to explain a quality control deficiency, and do not affect the quality (validity) of the data unless noted otherwise in the case narrative.

The vapor analysis performed by Transwest Geochem, Inc. is a screening technique based on a modified EPA method. This data is not to be used in compliance situations.

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100% Recycled

Date Printed 21-Apr-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Project Name: Toole
Project Number:
Work Order: 0603555
Date Received: 30-Mar-06

Case Narrative
Data Qualifiers

One or more of the following data qualifiers may be associated with your analytical and/or quality control data.

D1 Sample required dilution due to matrix.

D2 Sample required dilution due to high concentration of target analyte.

TRANSWEST GEOCHEM

Date Printed 21-Apr-06
License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Project Name: Toole
Project Number:
Work Order: 0603555

Work Order Sample Summary

Client Sample ID	Lab Sample ID	Test Code	Collection Date	Date Received
Toole-033006-IN	0603555-01A	8021B/8015B	3/30/06 07:35 AM	3/30/06 09:40 AM
Toole-033006-EFF	0603555-02A	8021B/8015B	3/30/06 07:30 AM	3/30/06 09:40 AM

Date Printed 21-Apr-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Project Name: Toole
Project Number:
Work Order: 0603555
Date Received: 30-Mar-06

Definitions

Analytical Spike (AS)	The AS is a known amount of a target analyte added to a sample after it has been distilled, digested, or extracted and is ready for analysis. The AS is generally performed if the MS has failed. It is used to indicate interference that arises from sample distillation, digestion, or extraction as opposed to interference that is innate to the matrix.
Continuing Curve Verification (CCV)	The CCV is also referred to as a curve check. This is a standard analyzed at specified intervals during an analysis. The CCV verifies the stability and accuracy of the calibration curve. There are specific CCV recovery acceptance criteria for each method.
Dilution Factor (DF)	The DF is an indication of how much a sample had to be diluted in order to quantitate it on a standard curve. The DF is indicated in the reported sample result. The sample PQL increases as the dilution increases.
Internal Standard (IS)	The IS is a compound that is similar to the organic compound of interest in terms of chemical composition but is unique in that it is rare in the environment. The same concentration of IS is added to every sample for some organic methods.
Laboratory Control Sample (LCS)	The LCS is also referred to as a blank spike. The LCS is an addition of a known amount of a target analyte (from the same source as calibration standards or spikes) to an aliquot of deionized water or other appropriate clean matrix. The LCS is processed through the entire method procedure in the same manner as samples.
Matrix Spike (MS)	The MS is a known amount of a target analyte added to a sample. The MS is processed through the entire method procedure in the same manner as samples.
Method Blank (MB)	The MB is an aliquot of deionized water or other appropriate clean matrix that is thought to be free of the analyte in question. The MB is processed through the entire extraction or analysis procedure and is used to indicate contamination in the lab.
Method Detection Limit (MDL)	The MDL is the lowest level of detection of which a method is capable.
Practical Quantitation Limit (PQL)	The PQL is the lowest value at which Transwest Geochem can detect an analyte in matrix with a high degree of confidence. The PQL will increase as the DF increases. The PQL is greater than or equal to the MDL.
Relative Percent Difference (RPD)	The RPD is a measure of precision (the ability to obtain the same result on re-analysis of the same sample). It is calculated using the result of a sample, MS, LCS, or LCSV and its associated duplicate result.
Secondary Source QC Sample (LCSV)	The LCSV is also referred to as a second source laboratory control sample. It is the same type of standard as a calibration or spiking standard but is obtained from a different source. The LCSV is an indication of the primary standard quality, method performance, and instrument performance.
Surrogate	A surrogate compound is similar to the organic compound of interest in terms of chemical composition but is unique in that it is rare in the environment. When surrogates are used, they are added to every sample, blank and standard. Surrogate recovery is used as an indication of extraction and/or analytical success.
Trip Blank (TB)	The TB is a portion of deionized water preserved in the same manner as the samples. The TB travels from the lab, to the field, and then back to the lab with the samples from the field. The TB serves as an indication of contamination introduced during sample transportation.

Date Printed 21-Apr-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Project Name: Toole
Project Number:
Work Order: 0603555
Date Received: 30-Mar-06

References

Transwest Geochem, Inc. uses the methods outlined in the following references:

Code of Federal Regulations, 40CFR, Part 136, Appendix A, 1998.

Standard Methods for the Examination of Water and Wastewater, 19th Edition, 1995.

Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Revised March 1983.

Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, Revised August 1993.

Methods for the Determination of Metals in Environmental Samples, Supplement 1: EPA/600/R-94/111, Revised May 1994.

Methods for the Determination of Organic Compounds in Drinking Water, EPA/600/4-88/039, Revised July, 1991; EPA-600/4-90/020, Supplement I, July 1990; EPA-600/R-92/129; Supplement II, August 1992; EPA-600/R-95/131, Supplement III, August 1995.

Hach, Water Analysis Handbook, 3rd Edition, 1997.

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition, 1986 including Update I, July 1992; Update IIA, August 1993; Update II; September 1994; Update IIB, January 1995; Update III, December 1996

Bureau of Laboratory Services, State of Arizona Department of Health Services Method 418.1AZ: TPH in Soil, September 1994.

Bureau of Laboratory Services, State of Arizona Department of Health Services Method 8015AZ.R1, September 1998. (Comment: C6-C10 GRO reported by this method is not to be used in compliance situations)

ASTM MethodD4982, Annual Book of ASTM Standards, Volumes 11.01 and 11.02, 1995

The Determination of Polychlorinated Biphenyls in Transformer Fluid and Waste Oils, EPA-600 4-81-045, September 1982.

TRANSWEST GEOCHEM

Date Printed 21-Apr-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0603555
Lab ID: 0603555-01
Project Name: Toole
Project Number:

Client Sample ID: Toole-033006-IN
Collection Date: 3/30/2006 7:35:00 AM
Matrix: Air

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene	**12**	1.0	D1	mg/m³	2.0	8021B/8015B	N/A	3/31/06	MO	ML2060331
Benzene-ppmv	**3.68**	0.32	D1	ppmv	2.00	8021B/8015B	N/A	3/31/06	MO	ML2060331B
Toluene	**20**	2.0	D1	mg/m³	2.0	8021B/8015B	N/A	3/31/06	MO	ML2060331
Toluene-ppmv	**5.29**	0.54	D1	ppmv	2.00	8021B/8015B	N/A	3/31/06	MO	ML2060331B
Ethylbenzene	**27**	2.0	D1	mg/m³	2.0	8021B/8015B	N/A	3/31/06	MO	ML2060331
Ethylbenzene-ppmv	**6.28**	0.46	D1	ppmv	2.00	8021B/8015B	N/A	3/31/06	MO	ML2060331B
Xylenes, total	**120**	3.0	D1	mg/m³	2.0	8021B/8015B	N/A	3/31/06	MO	ML2060331
Xylenes, total-ppmv	**27.50**	0.70	D1	ppmv	2.00	8021B/8015B	N/A	3/31/06	MO	ML2060331B
TVFHC (C6-C10)	**2000**	500	D2	mg/m³	5.0	8021B/8015B	N/A	3/31/06	MO	ML2060331
TVFHC (C6-C10)-ppmv	**488.25**	120.00	D2	ppmv	5.00	8021B/8015B	N/A	3/31/06	MO	ML2060331B
Bromofluorobenzene(Surrogate)	96	70-130		%REC	2.0	8021B/8015B	N/A	3/31/06	MO	ML2060331

TRANSWEST GEOCHEM

Date Printed 21-Apr-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0603555
Lab ID: 0603555-02
Project Name: Toole
Project Number:

Client Sample ID: Toole-033006-EFF
Collection Date: 3/30/2006 7:30:00 AM
Matrix: Air

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene	<0.50	0.50		mg/m³	1.0	8021B/8015B	N/A	3/31/06	MO	ML2060331
Benzene-ppmv	<0.16	0.16		ppmv	1.00	8021B/8015B	N/A	3/31/06	MO	ML2060331B
Toluene	<1.0	1.0		mg/m³	1.0	8021B/8015B	N/A	3/31/06	MO	ML2060331
Toluene-ppmv	<0.27	0.27		ppmv	1.00	8021B/8015B	N/A	3/31/06	MO	ML2060331B
Ethylbenzene	<1.0	1.0		mg/m³	1.0	8021B/8015B	N/A	3/31/06	MO	ML2060331
Ethylbenzene-ppmv	<0.23	0.23		ppmv	1.00	8021B/8015B	N/A	3/31/06	MO	ML2060331B
Xylenes, total	<1.5	1.5		mg/m³	1.0	8021B/8015B	N/A	3/31/06	MO	ML2060331
Xylenes, total-ppmv	<0.35	0.35		ppmv	1.00	8021B/8015B	N/A	3/31/06	MO	ML2060331B
TVFHC (C6-C10)	<100	100		mg/m³	1.0	8021B/8015B	N/A	3/31/06	MO	ML2060331
TVFHC (C6-C10)-ppmv	<24.00	24.00		ppmv	1.00	8021B/8015B	N/A	3/31/06	MO	ML2060331B
Bromofluorobenzene(Surrogate)	99	70-130		%REC	1.0	8021B/8015B	N/A	3/31/06	MO	ML2060331

TRANSWEST GEOCHEM

Date: 21-Apr-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0603555
Project: Toole

QC SUMMARY REPORT

Method Blank

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene-ppmv	<0.16	0.16		ppmv	1	8021B/8015B	N/A	3/31/06	MO	ML2060331B
Toluene-ppmv	<0.27	0.27		ppmv	1	8021B/8015B	N/A	3/31/06	MO	ML2060331B
Ethylbenzene-ppmv	<0.23	0.23		ppmv	1	8021B/8015B	N/A	3/31/06	MO	ML2060331B
Xylenes, total-ppmv	<0.35	0.35		ppmv	1	8021B/8015B	N/A	3/31/06	MO	ML2060331B
TVFHC (C6-C10)-ppmv	<24.00	24.00		ppmv	1	8021B/8015B	N/A	3/31/06	MO	ML2060331B
Benzene	<0.50	0.50		mg/m³	1	8021B/8015B	N/A	3/31/06	MO	ML2060331
Toluene	<1.0	1.0		mg/m³	1	8021B/8015B	N/A	3/31/06	MO	ML2060331
Ethylbenzene	<1.0	1.0		mg/m³	1	8021B/8015B	N/A	3/31/06	MO	ML2060331
Xylenes, total	<1.5	1.5		mg/m³	1	8021B/8015B	N/A	3/31/06	MO	ML2060331
TVFHC (C6-C10)	<100	100		mg/m³	1	8021B/8015B	N/A	3/31/06	MO	ML2060331
Bromofluorobenzene	98	70-130		%REC	1	8021B/8015B	N/A	3/31/06	MO	ML2060331

Date: 21-Apr-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0603555
Project: Toole

QC SUMMARY REPORT

Sample Duplicate

Analyte	Result	PQL	Units	RPD Ref Val	% RPD	RPD Limit	Test Code	Date Prepared	Date Analyzed	Analyst	Qual
Sample ID: **0603555-01AD**		Batch ID:	ML2060331								
Client ID: **Toole-033006-IN**											
Benzene	10.52	1.0	mg/m³	11.73	11%	30	8021B/8015B	N/A	3/31/06	MO	
Toluene	19.50	2.0	mg/m³	19.92	2%	30	8021B/8015B	N/A	3/31/06	MO	
Ethylbenzene	28.07	2.0	mg/m³	27.22	3%	30	8021B/8015B	N/A	3/31/06	MO	
Xylenes, total	127.14	3.0	mg/m³	119.2	6%	30	8021B/8015B	N/A	3/31/06	MO	
TVFHC (C6-C10)	2002	500	mg/m³	1997	0%	30	8021B/8015B	N/A	3/31/06	MO	

Date: 21-Apr-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0603555
Project: Toole

QC SUMMARY REPORT

Blank Spike

Analyte	Result	PQL	SPK value	SPK Ref Val	% Rec	Low Limit	High Limit	RPD Ref Val	% RPD	RPD Limit	Qual
Sample ID: **LCS 3/31**	Batch ID: ML2060331			Test Code: 8021B/8015B				Date Analyzed: 03/31/06 00:00			
				Units: mg/m³				Date Prepared: N/A			
Benzene	5.500	0.50	5.000		110%	70	130				
Toluene	5.600	1.0	5.000		112%	70	130				
Ethylbenzene	5.200	1.0	5.000		104%	70	130				
Xylenes, total	16.089	1.5	15.00		107%	70	130				
TVFHC (C6-C10)	239.8	100	250.0		96%	70	130				
Bromofluorobenzene	9.800	0.50	10.00		98%	70	130				

TRANSWEST GEOCHEM

Sample Receipt Checklist

Client Name: COT - ENV SVCS

Date and Time Received: 3/31/06 0900

Work Order Number: 0603555

Checked by: DO

Checklist completed by: O'Brien 3/31/06
Signature / Date

Logged In by: 3/31/06 lm
Initials / Date

Matrix: Air Carrier Name: Client KQ Express It

Reviewed by: 4/4
Initials / Date

				COMMENTS
Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑	
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	Temp: Ambient	Sampled < 2hrs ☐
Water – VOA vials have zero headspace?	Yes ☐	No ☐	N/A ☑	
Water – pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	
Water – Sulfides present in Cyanide samples?	Yes ☐	No ☐	N/A ☑	

Adjusted ? n/a Checked by: n/a

Client contacted: _____ Date contacted: _____ Person contacted: _____

Contacted by: _____ Regarding: _____

Corrective Action: _____

TRANSWEST GEOCHEM

Sample Receipt Checklist

Client Name: COT - Env. Svcs.

Date and Time Received: 3/30/06 9:40

Work Order Number: 0603555

Received by: Richard Mosher

Checklist completed by: Jeni Collins 3/30/06
Signature / Date

Logged In by: JM 3/31/06
Initials / Date

Matrix: Air

Carrier Name: Client

Reviewed by: _____
Initials / Date

				COMMENTS
Shipping container/cooler in good condition?	Yes ☒	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☒	
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☒	
Chain of custody present?	Yes ☒	No ☐		
Chain of custody signed when relinquished and received?	Yes ☒	No ☐		
Chain of custody agrees with sample labels?	Yes ☒	No ☐		
Samples in proper container/bottle?	Yes ☒ KC	No ☐	N/A ☐	
Sample containers intact?	Yes ☒	No ☐		
Sufficient sample volume for indicated test?	Yes ☒	No ☐		
All samples received within holding time?	Yes ☒	No ☐		
Container/Temp Blank temperature in compliance?	Yes ☒	No ☐	Temp: Amb.	- air samples
Water – VOA vials have zero headspace?	Yes ☐	No ☐	N/A ☒	
Water – pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☒	
Water – Sulfides present in Cyanide samples?	Yes ☐	No ☐	N/A ☒	

Adjusted ? _____ Checked by: _____

Client contacted: _____ Date contacted: _____ Person contacted: _____

Contacted by: _____ Regarding: _____

Corrective Action: _____

TRANSWEST GEOCHEM

3725 E. Atlanta Ave., Ste 2
Phoenix, Arizona 85040
Phone: (602) 437-0330
Fax: (602) 437-0660

3860 S. Palo Verde Rd., Ste. 301
Tucson, Arizona 85714
Phone: (520) 573-1061
Fax: (520) 573-1063

Chain of Custody

TGI Work Order No: 0603555

Date 3.30.06 Page 1 of 1

Project Manager:	Molly Collins
Client Name:	COT-ENV SVCS
Address:	
City, State ZIP:	
Phone:	791-7514 Fax: 791-7517

Bill to:	COT-ENV SVCS
Company:	
Address:	
City, State ZIP:	
Phone:	Fax:

P.O. No.:	
Project Name:	TOOLE
Project Number:	

SAMPLE RECEIPT

Temperature:	Amb	Ice:	
Received Intact:	(Yes) No N/A	(Absent) / Present	
Custody Seals:	Yes (No) N/A	Wet / Blue	
Total No. of Containers:	2		

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Lab ID	No. of Containers	TPH, 8015AZR.1	BTEX (8021B)	Volatile Organics GCMS (624/8260AZ)	SDWA Volatiles, (524.2)	Semi-Volatile Organics GCMS (625/8270)	Organochlorine Pesticides (608/8081)	PCB's, (8082)	PAH, EPA 8310	8 RCRA Metals	Comments
Toole.033006.IN	Air	3.30.06	0725	01	1	X	X								
Toole.033006.EFF	Air	3.30.06	0730	02	1	X	X								

Relinquished by: (Signature)	(Print Name)	Received by: (Signature)	(Print Name)	Date/Time
1		K Mosher	K. MOSHER	3/30/06 09:40
2 Molly Collins	Molly Collins		Express It	3/30/06 15:00
3 Express It		Katina Quinn	Katina Quinn	3/31/06 0900

2.7

White copy to TGI, Yellow copy for final report, Pink copy to sampler

Revised : 7/21/2004

TRANSWEST GEOCHEM

April 16, 2007

Alison Jones
City of Tucson, Environmental Services
100 N. Stone, 2nd Floor, W. Side
Tucson, AZ 85701

RE: Toole

Work Order No.: 0703690

Dear Alison,

Transwest Geochem, Inc. received 2 samples on 3/28/07. The results of the analyses are presented in the following report.

The Case Narrative of this report addresses any Quality Control and/or Quality Assurance issues associated with this Work Order.

If you have any questions regarding these test results, please feel free to call us at (602) 437-0330.

Sincerely,

Marcia A. Smith
Project Manager

ADHS License No. AZM133/AZ0133

3725 E. Atlanta Avenue • Phoenix, Arizona 85040 • (602) 437-0330 • (800) 927-5183 • Fax (602) 437-0660
3860 S. Palo Verde Rd. • Suite 301 • Tucson, Arizona 85714 • (520) 573-1061 • Fax (520) 573-1063
100% Recycled

Client: City of Tucson, Environmental Services
Work Order: 0703690
Project Name: Toole
Project Number:

Date Printed: 16-Apr-07

Case Narrative

All method blanks, laboratory spikes, and/or matrix spikes met quality control objectives for the parameters associated with this Work Order except as detailed below or on the Data Qualifier page of this report. Data Qualifiers used in this report are in accordance with ADEQ Arizona Data Qualifiers, Revision 2.0 11/26/2003.

Data qualifiers ("flags") contained within this analytical report have been issued to explain a quality control deficiency, and do not affect the quality (validity) of the data unless noted otherwise in the case narrative.

The vapor analysis performed by Transwest Geochem, Inc. is a non-compliance screening method based on a modified EPA method.

3725 E. Atlanta Avenue • Phoenix, Arizona 85040 • (602) 437-0330 • (800) 927-5183 • Fax (602) 437-0660
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TRANSWEST GEOCHEM

Date Printed 06-Apr-07
License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Project Name: Toole
Project Number:
Work Order: 0703690

Work Order Sample Summary

Client Sample ID	Lab Sample ID	Test Code	Collection Date	Date Received
Toole-032807-IN	0703690-01A	8021B/8015B	3/28/07 07:00 AM	3/28/07 08:15 AM
Toole-032807-EFF	0703690-02A	8021B/8015B	3/28/07 07:05 AM	3/28/07 08:15 AM

Date Printed 06-Apr-07

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Project Name: Toole
Project Number:
Work Order: 0703690
Date Received: 28-Mar-07

Definitions

Analytical Spike (AS)	The AS is a known amount of a target analyte added to a sample after it has been distilled, digested, or extracted and is ready for analysis. The AS is generally performed if the MS has failed. It is used to indicate interference that arises from sample distillation, digestion, or extraction as opposed to interference that is innate to the matrix.
Continuing Curve Verification (CCV)	The CCV is also referred to as a curve check. This is a standard analyzed at specified intervals during an analysis. The CCV verifies the stability and accuracy of the calibration curve. There are specific CCV recovery acceptance criteria for each method.
Dilution Factor (DF)	The DF is an indication of how much a sample had to be diluted in order to quantitate it on a standard curve. The DF is indicated in the reported sample result. The sample PQL increases as the dilution increases.
Internal Standard (IS)	The IS is a compound that is similar to the organic compound of interest in terms of chemical composition but is unique in that it is rare in the environment. The same concentration of IS is added to every sample for some organic methods.
Laboratory Control Sample (LCS)	The LCS is also referred to as a blank spike. The LCS is an addition of a known amount of a target analyte (from the same source as calibration standards or spikes) to an aliquot of deionized water or other appropriate clean matrix. The LCS is processed through the entire method procedure in the same manner as samples.
Matrix Spike (MS)	The MS is a known amount of a target analyte added to a sample. The MS is processed through the entire method procedure in the same manner as samples.
Method Blank (MB)	The MB is an aliquot of deionized water or other appropriate clean matrix that is thought to be free of the analyte in question. The MB is processed through the entire extraction or analysis procedure and is used to indicate contamination in the lab.
Method Detection Limit (MDL)	The MDL is the lowest level of detection of which a method is capable.
Practical Quantitation Limit (PQL)	The PQL is the lowest value at which Transwest Geochem can detect an analyte in matrix with a high degree of confidence. The PQL will increase as the DF increases. The PQL is greater than or equal to the MDL.
Relative Percent Difference (RPD)	The RPD is a measure of precision (the ability to obtain the same result on re-analysis of the same sample). It is calculated using the result of a sample, MS, LCS, or LCSV and its associated duplicate result.
Secondary Source QC Sample (LCSV)	The LCSV is also referred to as a second source laboratory control sample. It is the same type of standard as a calibration or spiking standard but is obtained from a different source. The LCSV is an indication of the primary standard quality, method performance, and instrument performance.
Surrogate	A surrogate compound is similar to the organic compound of interest in terms of chemical composition but is unique in that it is rare in the environment. When surrogates are used, they are added to every sample, blank and standard. Surrogate recovery is used as an indication of extraction and/or analytical success.
Trip Blank (TB)	The TB is a portion of deionized water preserved in the same manner as the samples. The TB travels from the lab, to the field, and then back to the lab with the samples from the field. The TB serves as an indication of contamination introduced during sample transportation.

CLIENT: City of Tucson, Environmental Services
Project Name: Toole
Project Number:
Work Order: 0703690
Date Received: 28-Mar-07

References

Transwest Geochem, Inc. uses the methods outlined in the following references:

Code of Federal Regulations, 40CFR, Part 136, Appendix A, 1998.

Standard Methods for the Examination of Water and Wastewater, 19th Edition, 1995.

Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Revised March 1983.

Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, Revised August 1993.

Methods for the Determination of Metals in Environmental Samples, Supplement 1: EPA/600/R-94/111, Revised May 1994.

Methods for the Determination of Organic Compounds in Drinking Water, EPA/600/4-88/039, Revised July, 1991; EPA-600/4-90/020, Supplement I, July 1990; EPA-600/R-92/129; Supplement II, August 1992; EPA-600/R-95/131, Supplement III, August 1995.

Hach, Water Analysis Handbook, 3rd Edition, 1997.

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition, 1986 including Update I, July 1992; Update IIA, August 1993; Update II; September 1994; Update IIB, January 1995; Update III, December 1996

Bureau of Laboratory Services, State of Arizona Department of Health Services Method 418.1AZ: TPH in Soil, September 1994.

Bureau of Laboratory Services, State of Arizona Department of Health Services Method 8015AZ.R1, September 1998. (Comment: C6-C10 GRO reported by this method is not to be used in compliance situations)

ASTM MethodD4982, Annual Book of ASTM Standards, Volumes 11.01 and 11.02, 1995

The Determination of Polychlorinated Biphenyls in Transformer Fluid and Waste Oils, EPA-600 4-81-045, September 1982.

TRANSWEST GEOCHEM

Date Printed 06-Apr-07

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0703690
Lab ID: 0703690-01
Project Name: Toole
Project Number:

Client Sample ID: Toole-032807-IN
Collection Date: 3/28/2007 7:00:00 AM
Matrix: Air

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene	**1.7**	0.50		mg/m³	1.0	8021B/8015B	N/A	3/30/07	MO	ML02070330
Benzene-ppmv	**0.53**	0.16		ppmv	1.00	8021B/8015B	N/A	3/30/07	MO	ML02070330B
Toluene	**15**	1.0		mg/m³	1.0	8021B/8015B	N/A	3/30/07	MO	ML02070330
Toluene-ppmv	**3.93**	0.27		ppmv	1.00	8021B/8015B	N/A	3/30/07	MO	ML02070330B
Ethylbenzene	**8.1**	1.0		mg/m³	1.0	8021B/8015B	N/A	3/30/07	MO	ML02070330
Ethylbenzene-ppmv	**1.87**	0.23		ppmv	1.00	8021B/8015B	N/A	3/30/07	MO	ML02070330B
Xylenes, total	**35**	1.5		mg/m³	1.0	8021B/8015B	N/A	3/30/07	MO	ML02070330
Xylenes, total-ppmv	**7.98**	0.35		ppmv	1.00	8021B/8015B	N/A	3/30/07	MO	ML02070330B
TVFHC (C6-C10)	**660**	100		mg/m³	1.0	8021B/8015B	N/A	3/30/07	MO	ML02070330
TVFHC (C6-C10)-ppmv	**162.35**	24.00		ppmv	1.00	8021B/8015B	N/A	3/30/07	MO	ML02070330B
Bromofluorobenzene(Surrogate)	102	56-140		%REC	1.0	8021B/8015B	N/A	3/30/07	MO	ML02070330

TRANSWEST GEOCHEM

Date Printed 06-Apr-07

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0703690
Lab ID: 0703690-02
Project Name: Toole
Project Number:

Client Sample ID: Toole-032807-EFF
Collection Date: 3/28/2007 7:05:00 AM
Matrix: Air

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene	<0.50	0.50		mg/m³	1.0	8021B/8015B	N/A	3/30/07	MO	ML02070330
Benzene-ppmv	<0.16	0.16		ppmv	1.00	8021B/8015B	N/A	3/30/07	MO	ML02070330B
Toluene	<1.0	1.0		mg/m³	1.0	8021B/8015B	N/A	3/30/07	MO	ML02070330
Toluene-ppmv	<0.27	0.27		ppmv	1.00	8021B/8015B	N/A	3/30/07	MO	ML02070330B
Ethylbenzene	<1.0	1.0		mg/m³	1.0	8021B/8015B	N/A	3/30/07	MO	ML02070330
Ethylbenzene-ppmv	<0.23	0.23		ppmv	1.00	8021B/8015B	N/A	3/30/07	MO	ML02070330B
Xylenes, total	<1.5	1.5		mg/m³	1.0	8021B/8015B	N/A	3/30/07	MO	ML02070330
Xylenes, total-ppmv	<0.35	0.35		ppmv	1.00	8021B/8015B	N/A	3/30/07	MO	ML02070330B
TVFHC (C6-C10)	<100	100		mg/m³	1.0	8021B/8015B	N/A	3/30/07	MO	ML02070330
TVFHC (C6-C10)-ppmv	<24.00	24.00		ppmv	1.00	8021B/8015B	N/A	3/30/07	MO	ML02070330B
Bromofluorobenzene(Surrogate)	97	56-140		%REC	1.0	8021B/8015B	N/A	3/30/07	MO	ML02070330

Confidential and Privileged

Date: 06-Apr-07

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0703690
Project: Toole

QC SUMMARY REPORT

Method Blank

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene-ppmv	<0.16	0.16		ppmv	1	8021B/8015B	N/A	3/30/07	MO	ML02070330B
Toluene-ppmv	<0.27	0.27		ppmv	1	8021B/8015B	N/A	3/30/07	MO	ML02070330B
Ethylbenzene-ppmv	<0.23	0.23		ppmv	1	8021B/8015B	N/A	3/30/07	MO	ML02070330B
Xylenes, total-ppmv	<0.35	0.35		ppmv	1	8021B/8015B	N/A	3/30/07	MO	ML02070330B
TVFHC (C6-C10)-ppmv	<24.00	24.00		ppmv	1	8021B/8015B	N/A	3/30/07	MO	ML02070330B
Benzene	<0.50	0.50		mg/m³	1	8021B/8015B	N/A	3/30/07	MO	ML02070330
Toluene	<1.0	1.0		mg/m³	1	8021B/8015B	N/A	3/30/07	MO	ML02070330
Ethylbenzene	<1.0	1.0		mg/m³	1	8021B/8015B	N/A	3/30/07	MO	ML02070330
Xylenes, total	<1.5	1.5		mg/m³	1	8021B/8015B	N/A	3/30/07	MO	ML02070330
TVFHC (C6-C10)	<100	100		mg/m³	1	8021B/8015B	N/A	3/30/07	MO	ML02070330
Bromofluorobenzene	98	56-140		%REC	1	8021B/8015B	N/A	3/30/07	MO	ML02070330

TRANSWEST GEOCHEM

Date: 06-Apr-07

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0703690
Project: Toole

QC SUMMARY REPORT

Sample Duplicate

Analyte	Result	PQL	Units	RPD Ref Val	% RPD	RPD Limit	Test Code	Date Prepared	Date Analyzed	Analyst	Qual
Sample ID: **0703666-02AD**		Batch ID:	ML02070330								
Client ID:											
Benzene	65.32	2.5	mg/m³	66.07	1%	30	8021B/8015B	N/A	3/30/07	MO	
Toluene	12.66	5.0	mg/m³	11.90	6%	30	8021B/8015B	N/A	3/30/07	MO	
Ethylbenzene	<5.0	5.0	mg/m³	<5.0	0%	30	8021B/8015B	N/A	3/30/07	MO	
Xylenes, total	21.037	7.5	mg/m³	18.70	12%	30	8021B/8015B	N/A	3/30/07	MO	
TVFHC (C6-C10)	3890	500	mg/m³	3889	0%	30	8021B/8015B	N/A	3/30/07	MO	

Date: 06-Apr-07

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0703690
Project: Toole

QC SUMMARY REPORT

Blank Spike

Analyte	Result	PQL	SPK value	SPK Ref Val	% Rec	Low Limit	High Limit	RPD Ref Val	% RPD	RPD Limit	Qual
Sample ID: **LCS 3/30**	Batch ID: ML02070330			Test Code: 8021B/8015B				Date Analyzed: 03/30/07 00:00			
				Units: mg/m³				Date Prepared: N/A			
Benzene	5.000	0.50	5.000		100%	70	130				
Toluene	4.900	1.0	5.000		98%	70	130				
Ethylbenzene	5.000	1.0	5.000		100%	70	130				
Xylenes, total	14.909	1.5	15.00		99%	70	130				
TVFHC (C6-C10)	244.0	100	250.0		98%	56	135				
Bromofluorobenzene	9.700	0.50	10.00		97%	56	140				

GEOCHEM

Sample Receipt Checklist

Client Name: COT - ES

Date and Time Received: 3/28/07 8:15

Work Order Number: 0703690

Received by: Richard Mosher

Checklist completed by: Kerri Collins 3/28/07
Signature / Date

Logged In by: _____
Initials / Date

Matrix: Air

Carrier Name: Client

Reviewed by: _____
Initials / Date

				COMMENTS
Shipping container/cooler in good condition?	Yes ☐	No ☐	Not Present ☒	
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☒	
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☒	
Chain of custody present?	Yes ☒	No ☐		
Chain of custody signed when relinquished and received?	Yes ☒	No ☐		
Chain of custody agrees with sample labels?	Yes ☒	No ☐		
Samples in proper container/bottle?	Yes ☒	No ☐	N/A ☐	
Sample containers intact?	Yes ☒	No ☐		
Sufficient sample volume for indicated test?	Yes ☒	No ☐		
All samples received within holding time?	Yes ☒	No ☐		
Container/Temp Blank temperature in compliance?	Yes ☒	No ☐	Temp: Ambient	* Air samples
Water – VOA vials have zero headspace?	Yes ☐	No ☐	N/A ☒	
Water – pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☒	
Water – Sulfides present in Cyanide samples?	Yes ☐	No ☐	N/A ☒	

Adjusted ? _____ Checked by: _____

Client contacted: _____ Date contacted: _____ Person contacted: _____

Contacted by: _____ Regarding: _____

Corrective Action: _____

Storage Location: Tedlar

TRANSWEST GEOCHEM

Sample Receipt Checklist

Client Name: COT-ES

Date and Time Received: 3-28-07 1560

Work Order Number: 0703690

Checked by: [illegible]

Checklist completed by: [illegible] 3-28-07
Signature / Date

Logged In by: lm 3/29/07
Initials / Date

Matrix: Air Carrier Name: Client TGI _____

Reviewed by: MD 3-30-07
Initials / Date

				COMMENTS
Shipping container/cooler in good condition?	Yes ☒	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☒	
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☒	
Chain of custody present?	Yes ☒	No ☐		
Chain of custody signed when relinquished and received?	Yes ☒	No ☐		
Chain of custody agrees with sample labels?	Yes ☒	No ☐		
Samples in proper container/bottle?	Yes ☒	No ☐		
Sample containers intact?	Yes ☒	No ☐		
Sufficient sample volume for indicated test?	Yes ☒	No ☐		
All samples received within holding time?	Yes ☒	No ☐		
Container/Temp Blank temperature in compliance?	Yes ☒	No ☐	Temp: Amb	Sampled < 2hrs ☐
Water – VOA vials have zero headspace?	Yes ☐	No ☐	N/A ☒	
Water – pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☒	Checked by: _____
Water – Sulfides present in Cyanide samples?	Yes ☐	No☐	N/A ☒	
Samples considered Drinking Water for metal analysis?	Yes ☐	No☐	N/A ☒	

Client contacted: _____ Date contacted: _____ Person contacted: _____

Contacted by: _____ Regarding: _____

Corrective Action: _____

TRANSWEST GEOCHEM

3725 E. Atlanta Ave.
Phoenix, Arizona 85040
Phone: (602) 437-0330
Fax: (602) 437-0660

3860 S. Palo Verde Rd., Ste. 301
Tucson, Arizona 85714
Phone: (520) 573-1061
Fax: (520) 573-1063

Chain of Custod

TGI Work Order No: 0703690

Date 3-28-07 Page 1 of 1

Project Manager:	Molly collins
Client Name:	COT- ES
Address:	
City, State, Zip:	
Phone:	791-5414
Fax:	791-5415

Bill To:	COT - ES
Company:	
Address:	
City, State, Zip:	
Phone:	
Fax:	

P.O. No.:	
Project Name:	TOOLE
Project Number:	

SAMPLE RECEIPT

Temperature:	AMB		Ice:	
Received Intact:	Yes	No	N/A	Absent / Present
Custody Seals:	Yes	No	N/A	Wet / Blue
Total No. of Containers:	2			Sampled <2 hrs ago

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Lab ID	No. of Containers	TPH, (8015AZR.1)	BTEX (8021B)	Volatile Organics GCMS (624/8260B)	SDWA Volatiles, (524.2)	Semi-Volatile Organics GCMS (625/8270)	Organochlorine Pesticides (608/8081)	PCB's, (8082)	PAH, EPA (8310)	8 RCRA Metals	Comments
TOOLE-032807-IN	AIR	3-28-07	0700	01	1	X	X								
TOOLE-032807-EFF	AIR	3-28-07	0705	02	1	X	X								

Relinquished by: (Signature)	(Print Name)	Received by: (Signature)	(Print Name)	Date / Time
1 [signature]	Tony Circello	R Mosher	R MOSHER	3/28/07 08:15
2 Kerri Collins	Kerri Collins	[signature]	Express It	3/28/07 11:00
3	Express It	Tracey [signature]	Tracey Mitchell	3-28-07 1500

White copy to TGI, Yellow copy for final report, Pink copy to sampler

Revised: 3/6/06

Aerotech Environmental Laboratories

a division of Aerotech Laboratories, Inc.

Friday, March 31, 2006

RECEIVED

APR 05 2006

ENVIRONMENTAL SERVICES
100 N. STONE AVE., 2ND FLOOR

Molly Collins
City of Tucson, Environmental Services
100 N. Stone Ave., 2nd Floor
Tucson, AZ 85710

TEL: (520) 791-5414
FAX (520) 791-5417

RE: Toole - PAH

Order No.: 06030133

Dear Molly Collins:

Aerotech Environmental, Inc. received 2 sample(s) on 3/15/2006 for the analyses presented in the following report.

This report includes the following information:
- Case Narrative.
- Analytical Report: includes test results, report limit (Limit), any applicable data qualifier (Qual), units, dilution factor (DF), and date analyzed.
- QC Summary Report.

This communication is intended only for the individual or entity to whom it is directed. It may contain information that is privileged, confidential, or otherwise exempt from disclosure under applicable law. Dissemination, distribution, or copying of this communication by anyone other than the intended recipient, or a duly designated employee or agent of such recipient, is prohibited. If you have received this communication in error, please notify us immediately and destroy this message and all attachments thereto. If you have any questions regarding these test results, please do not hesitate to call.

Sincerely,

Korky Vault
Service Center Manager

Aerotech Environmental Laboratories

a division of Aerotech Laboratories, Inc.

Aerotech Environmental, Inc. **Date:** *31-Mar-06*

CLIENT: City of Tucson, Environmental Services
Project: Toole - PAH
Lab Order: 06030133

CASE NARRATIVE

Samples were analyzed using methods outlined in references such as:

Standard Methods for the Examination of Water and Wastewater, 19th Edition, 1995.

Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Revised March 1983.

Methods for the Determination of Organic Compounds in Drinking Water: Supplement III, EPA/600/R-95/131, August 1995.

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition.

40 CFR, Part 136, Revised 1998. Appendix A to Part 136 - Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater.

NIOSH Manual of Analytical Methods, Fourth Edition, 1994.

Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, Second Edition, 1999.

Aerotech Environmental Laboratories (AEL) holds Arizona certification no. AZ0610 and AEL-Tucson holds Arizona certification no. AZ0609.

Aerotech Environmental Laboratories (Laboratory ID 154268) is accredited by the American Industrial Hygiene Association (AIHA) in the industrial hygiene program for the analytical techniques noted on the scope of accreditation.

Analytical Comments:

All method blanks and laboratory control spikes met EPA method and/or laboratory quality control objectives for the analyses included in this report.

Data Qualifiers:
Listed below are the data qualifiers used in your analytical report to explain any analytical or quality control issues. You will find them noted in your report under the column header "QUAL". Any quality control deficiencies that cannot be adequately described by these qualifiers will be addressed in the analytical comments section of this case narrative.

IH10 Sample RPD between the primary and confirmatory analysis exceeded 40%. The lower value was reported due to apparent chromatographic inference.

Main Laboratory: 4645 E. Cotton Center Boulevard, Building 3, Suite 189 Phoenix, AZ 85040 Phone: 602.437.3340 Toll Free: 866.772.5227 Fax. 623.445.6192 www.aeroenvirolabs.com
Tucson Facility: 4455 S. Park Ave. Ste. 110 Tucson, AZ 85714 Phone: 520.807.3801 Fax: 520.807.3803
Corporate Address: 1501 W. Knudsen Drive, Phoenix, Arizona 85027

Aerotech Environmental Laboratories

a division of Aerotech Laboratories, Inc.

Analytical Results
for
City of Tucson, Environmental Services

WorkOrder: 06030133
Client Reference: Toole - PAH

Sample Identification: Toole-P1-031506
Lab Number: -01A
Sample Type:

Date Sampled: 3/15/2006
Date Received: 3/15/2006
Air Volume (L): NA

Analyte		Concentration (µg, Total)	Concentration (mg/m³)	Concentration (ppm)	Limit of Detection (µg, Total)	Qual	Test Method	Date Analyzed /Analyst
Acenaphthene	Total	38.7	--	--	2.00		NIOSH 5506 (Mod	03/24/2006 S S
	Front	27.11955						
	Back	11.60645 (a)						
Acenaphthylene	Total	48.8	--	--	2.50		NIOSH 5506 (Mod	03/24/2006 S S
	Front	36.127						
	Back	12.72075 (a)						
Anthracene		<0.250	--	--	0.250		NIOSH 5506 (Mod	03/24/2006 S S
Benz(a)anthracene		<0.250	--	--	0.250		NIOSH 5506 (Mod	03/24/2006 S S
Benzo(a)pyrene		<0.250	--	--	0.250		NIOSH 5506 (Mod	03/24/2006 S S
Benzo(b)fluoranthene		<0.500	--	--	0.500		NIOSH 5506 (Mod	03/24/2006 S S
Benzo(g,h,i)perylene		<0.500	--	--	0.500		NIOSH 5506 (Mod	03/24/2006 S S
Benzo(k)fluoranthene		<0.250	--	--	0.250		NIOSH 5506 (Mod	03/24/2006 S S
Chrysene		<0.250	--	--	0.250		NIOSH 5506 (Mod	03/24/2006 S S
Dibenz(a,h)anthracene		<0.500	--	--	0.500		NIOSH 5506 (Mod	03/24/2006 S S
Fluoranthene		<0.500	--	--	0.500		NIOSH 5506 (Mod	03/24/2006 S S
Fluorene	Total	2.40	--	--	0.500	IH10	NIOSH 5506 (Mod	03/24/2006 S S
	Front	1.76365						
	Back	0.63708 (a)						
Indeno(1,2,3-cd)pyrene		<0.250	--	--	0.250		NIOSH 5506 (Mod	03/24/2006 S S
Naphthalene	Total	307	--	--	1.00		NIOSH 5506 (Mod	03/24/2006 S S
	Front	220.8928						
	Back	86.47525 (a)						
Phenanthrene		0.350	--	--	0.250		NIOSH 5506 (Mod	03/24/2006 S S
Pyrene		<0.250	--	--	0.250		NIOSH 5506 (Mod	03/24/2006 S S

General Notes:
<: Less than the indicated limit of detection (LOD).
--: Information not available or not applicable.
Back sections were checked and showed no significant breakthrough.

(a) Analysis indicates possible breakthrough; back section result is greater than % of the front section result.

Main Laboratory: 4645 E. Cotton Center Boulevard, Building 3, Suite 189 Phoenix, AZ 85040 Phone: 602.437.3340 Toll Free: 866.772.5227 Fax. 623.445.6192 www.aeroenvirolabs.com
Tucson Facility: 4455 S. Park Ave. Ste. 110 Tucson, AZ 85714 Phone: 520.807.3801 Fax: 520.807.3803
Corporate Address: 1501 W. Knudsen Drive, Phoenix, Arizona 85027 Phone: 623.780.4800 Toll Free: [illegible]

Aerotech Environmental Laboratories

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Analytical Results
for
City of Tucson, Environmental Services
WorkOrder: 06030133
Client Reference: Toole - PAH

Sample Identification: Toole-P1-031506
Lab Number: -01B
Sample Type:

Date Sampled: 3/15/2006
Date Received: 3/15/2006
Air Volume (L): NA

Analyte	Concentration (µg, Total)	Concentration (mg/m³)	Concentration (ppm)	Limit of Detection (µg, Total)	Qual	Test Method	Date Analyzed /Analyst	
Acenaphthene	<2.00	--	--	2.00		NIOSH 5506 (Mod	03/24/2006	S S
Acenaphthylene	<2.50	--	--	2.50		NIOSH 5506 (Mod	03/24/2006	S S
Anthracene	<0.250	--	--	0.250		NIOSH 5506 (Mod	03/24/2006	S S
Benz(a)anthracene	<0.250	--	--	0.250		NIOSH 5506 (Mod	03/24/2006	S S
Benzo(a)pyrene	<0.250	--	--	0.250		NIOSH 5506 (Mod	03/24/2006	S S
Benzo(b)fluoranthene	<0.500	--	--	0.500		NIOSH 5506 (Mod	03/24/2006	S S
Benzo(g,h,i)perylene	<0.500	--	--	0.500		NIOSH 5506 (Mod	03/24/2006	S S
Benzo(k)fluoranthene	<0.250	--	--	0.250		NIOSH 5506 (Mod	03/24/2006	S S
Chrysene	<0.250	--	--	0.250		NIOSH 5506 (Mod	03/24/2006	S S
Dibenz(a,h)anthracene	<0.500	--	--	0.500		NIOSH 5506 (Mod	03/24/2006	S S
Fluoranthene	<0.500	--	--	0.500		NIOSH 5506 (Mod	03/24/2006	S S
Fluorene	<0.500	--	--	0.500		NIOSH 5506 (Mod	03/24/2006	S S
Indeno(1,2,3-cd)pyrene	<0.250	--	--	0.250		NIOSH 5506 (Mod	03/24/2006	S S
Naphthalene	<1.00	--	--	1.00		NIOSH 5506 (Mod	03/24/2006	S S
Phenanthrene	<0.250	--	--	0.250		NIOSH 5506 (Mod	03/24/2006	S S
Pyrene	<0.250	--	--	0.250		NIOSH 5506 (Mod	03/24/2006	S S

General Notes:
<: Less than the indicated limit of detection (LOD).
--: Information not available or not applicable.
Back sections were checked and showed no significant breakthrough.

(a) Analysis indicates possible breakthrough; back section result is greater than % of the front section result.

Main Laboratory: 4645 E. Cotton Center Boulevard, Building 3, Suite 189 Phoenix, AZ 85040 Phone: 602.437.3340 Toll Free: 866.772.5227 Fax. 623.445.6192 www.aeroenvirolabs.com
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Corporate Address: 1501 W. Knudsen Drive, Phoenix, Arizona 85027

Aerotech Environmental Laboratories

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Analytical Results
for
City of Tucson, Environmental Services
WorkOrder: 06030133
Client Reference: Toole - PAH

Sample Identification: Toole-P2-031506
Lab Number: -02A
Sample Type:

Date Sampled: 3/15/2006
Date Received: 3/15/2006
Air Volume (L): NA

Analyte		Concentration (µg, Total)	Concentration (mg/m³)	Concentration (ppm)	Limit of Detection (µg, Total)	Qual	Test Method	Date Analyzed /Analyst	
Acenaphthene		<2.00	--	--	2.00		NIOSH 5506 (Mod	03/24/2006	S S
Acenaphthylene		<2.50	--	--	2.50		NIOSH 5506 (Mod	03/24/2006	S S
Anthracene		<0.250	--	--	0.250		NIOSH 5506 (Mod	03/24/2006	S S
Benz(a)anthracene		<0.250	--	--	0.250		NIOSH 5506 (Mod	03/24/2006	S S
Benzo(a)pyrene		<0.250	--	--	0.250		NIOSH 5506 (Mod	03/24/2006	S S
Benzo(b)fluoranthene		<0.500	--	--	0.500		NIOSH 5506 (Mod	03/24/2006	S S
Benzo(g,h,i)perylene		<0.500	--	--	0.500		NIOSH 5506 (Mod	03/24/2006	S S
Benzo(k)fluoranthene		<0.250	--	--	0.250		NIOSH 5506 (Mod	03/24/2006	S S
Chrysene		<0.250	--	--	0.250		NIOSH 5506 (Mod	03/24/2006	S S
Dibenz(a,h)anthracene		<0.500	--	--	0.500		NIOSH 5506 (Mod	03/24/2006	S S
Fluoranthene		<0.500	--	--	0.500		NIOSH 5506 (Mod	03/24/2006	S S
Fluorene		<0.500	--	--	0.500		NIOSH 5506 (Mod	03/24/2006	S S
Indeno(1,2,3-cd)pyrene		<0.250	--	--	0.250		NIOSH 5506 (Mod	03/24/2006	S S
Naphthalene	Total	7.10	--	--	1.00		NIOSH 5506 (Mod	03/24/2006	S S
	Front	5.47475							
	Back	1.624145 (a)							
Phenanthrene		<0.250	--	--	0.250		NIOSH 5506 (Mod	03/24/2006	S S
Pyrene		<0.250	--	--	0.250		NIOSH 5506 (Mod	03/24/2006	S S

General Notes:
<: Less than the indicated limit of detection (LOD).
--: Information not available or not applicable.
Back sections were checked and showed no significant breakthrough.

(a) Analysis indicates possible breakthrough; back section result is greater than % of the front section result.

Main Laboratory: 4645 E. Cotton Center Boulevard, Building 3, Suite 189 Phoenix, AZ 85040 Phone: 602.437.3340 Toll Free: 866.772.5227 Fax. 623.445.6192 www.aeroenvirolabs.com
Tucson Facility: 4455 S. Park Ave. Ste. 110 Tucson, AZ 85714 Phone: 520.807.3801 Fax: 520.807.3803
Corporate Address: 1501 W. Knudsen Drive, Phoenix, Arizona 85027 Phone: 623.780.4800 Toll Free

Aerotech Environmental Laboratories

a division of Aerotech Laboratories, Inc.

Analytical Results
for
City of Tucson, Environmental Services
WorkOrder: 06030133
Client Reference: Toole - PAH

Sample Identification: Toole-P2-031506
Lab Number: -02B
Sample Type:

Date Sampled: 3/15/2006
Date Received: 3/15/2006
Air Volume (L): NA

Analyte	Concentration (µg, Total)	Concentration (mg/m³)	Concentration (ppm)	Limit of Detection (µg, Total)	Qual	Test Method	Date Analyzed /Analyst	
Acenaphthene	<2.00	--	--	2.00		NIOSH 5506 (Mod	03/24/2006	S S
Acenaphthylene	<2.50	--	--	2.50		NIOSH 5506 (Mod	03/24/2006	S S
Anthracene	<0.250	--	--	0.250		NIOSH 5506 (Mod	03/24/2006	S S
Benz(a)anthracene	<0.250	--	--	0.250		NIOSH 5506 (Mod	03/24/2006	S S
Benzo(a)pyrene	<0.250	--	--	0.250		NIOSH 5506 (Mod	03/24/2006	S S
Benzo(b)fluoranthene	<0.500	--	--	0.500		NIOSH 5506 (Mod	03/24/2006	S S
Benzo(g,h,i)perylene	<0.500	--	--	0.500		NIOSH 5506 (Mod	03/24/2006	S S
Benzo(k)fluoranthene	<0.250	--	--	0.250		NIOSH 5506 (Mod	03/24/2006	S S
Chrysene	<0.250	--	--	0.250		NIOSH 5506 (Mod	03/24/2006	S S
Dibenz(a,h)anthracene	<0.500	--	--	0.500		NIOSH 5506 (Mod	03/24/2006	S S
Fluoranthene	<0.500	--	--	0.500		NIOSH 5506 (Mod	03/24/2006	S S
Fluorene	<0.500	--	--	0.500		NIOSH 5506 (Mod	03/24/2006	S S
Indeno(1,2,3-cd)pyrene	<0.250	--	--	0.250		NIOSH 5506 (Mod	03/24/2006	S S
Naphthalene	<1.00	--	--	1.00		NIOSH 5506 (Mod	03/24/2006	S S
Phenanthrene	<0.250	--	--	0.250		NIOSH 5506 (Mod	03/24/2006	S S
Pyrene	<0.250	--	--	0.250		NIOSH 5506 (Mod	03/24/2006	S S

General Notes:
<: Less than the indicated limit of detection (LOD).
--: Information not available or not applicable.
Back sections were checked and showed no significant breakthrough.

(a) Analysis indicates possible breakthrough; back section result is greater than % of the front section result.

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a division of Aerotech Laboratories, Inc.

Aerotech Environmental, Inc.

Date: *31-Mar-06*

CLIENT: City of Tucson, Environmental Services
Work Order: 06030133
Project: Toole - PAH

ANALYTICAL QC SUMMARY REPORT

TestCode: A_N5506_IH

Sample ID: **MB-R71818 FILTER** SampType: **MBLK** TestCode: **A_N5506_IH** Units: **µg, Total** Prep Date: RunNo: **71818**
Client ID: Batch ID: **R71818** TestNo: **N5506** Analysis Date: **3/24/2006** SeqNo: **855997**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthene	<2.00	2.00									
Acenaphthylene	<2.50	2.50									
Anthracene	<0.250	0.250									
Benz(a)anthracene	<0.250	0.250									
Benzo(a)pyrene	<0.250	0.250									
Benzo(b)fluoranthene	<0.500	0.500									
Benzo(g,h,i)perylene	<0.500	0.500									
Benzo(k)fluoranthene	<0.250	0.250									
Chrysene	<0.250	0.250									
Dibenz(a,h)anthracene	<0.500	0.500									
Fluoranthene	<0.500	0.500									
Fluorene	<0.500	0.500									
Indeno(1,2,3-cd)pyrene	<0.250	0.250									
Naphthalene	<1.00	1.00									
Phenanthrene	<0.250	0.250									
Pyrene	<0.250	0.250									

Sample ID: **MB-R71818** SampType: **MBLK** TestCode: **A_N5506_IH** Units: **µg, Total** Prep Date: RunNo: **71818**
Client ID: Batch ID: **R71818** TestNo: **N5506** Analysis Date: **3/24/2006** SeqNo: **856005**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthene	<2.00	2.00									
Acenaphthylene	<2.50	2.50									
Anthracene	<0.250	0.250									
Benz(a)anthracene	<0.250	0.250									
Benzo(a)pyrene	<0.250	0.250									
Benzo(b)fluoranthene	<0.500	0.500									

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

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Corporate Address: 1501 W. Knudsen Drive, Phoenix, Arizona 85027 Phone: 623.780.4800 Toll Free: 800.651.4802 Fax: 623.780.7695 www.aerotechlabs.com

CLIENT: City of Tucson, Environmental Services
Work Order: 06030133
Project: Toole - PAH

ANALYTICAL QC SUMMARY REPORT

TestCode: A_N5506_IH

Sample ID: **MB-R71818** SampType: **MBLK** TestCode: **A_N5506_IH** Units: **µg, Total** Prep Date: RunNo: **71818**
Client ID: Batch ID: **R71818** TestNo: **N5506** Analysis Date: **3/24/2006** SeqNo: **856005**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(g,h,i)perylene	<0.500	0.500									
Benzo(k)fluoranthene	<0.250	0.250									
Chrysene	<0.250	0.250									
Dibenz(a,h)anthracene	<0.500	0.500									
Fluoranthene	<0.500	0.500									
Fluorene	<0.500	0.500									
Indeno(1,2,3-cd)pyrene	<0.250	0.250									
Naphthalene	<1.00	1.00									
Phenanthrene	<0.250	0.250									
Pyrene	<0.250	0.250									

Sample ID: **LCS** SampType: **LCS** TestCode: **A_N5506_IH** Units: **µg, Total** Prep Date: RunNo: **71818**
Client ID: Batch ID: **R71818** TestNo: **N5506** Analysis Date: **3/25/2006** SeqNo: **856014**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthene	14.10	2.00	15	0	94.0	59.8	157				
Acenaphthylene	27.73	2.50	30	0	92.4	69.8	139				
Anthracene	1.416	0.250	1.5	0	94.4	63	136				
Benz(a)anthracene	1.290	0.250	1.5	0	86.0	65.2	128				
Benzo(a)pyrene	1.134	0.250	1.5	0	75.6	49.4	122				
Benzo(b)fluoranthene	2.289	0.500	3	0	76.3	57.4	125				
Benzo(g,h,i)perylene	1.984	0.500	3	0	66.1	40.2	113				
Benzo(k)fluoranthene	1.120	0.250	1.5	0	74.7	59	123				
Chrysene	1.272	0.250	1.5	0	84.8	55.9	131				
Dibenz(a,h)anthracene	2.050	0.500	3	0	68.3	51.5	116				
Fluoranthene	2.629	0.500	3	0	87.6	66.3	129				
Fluorene	2.755	0.500	3	0	91.8	60.4	147				
Indeno(1,2,3-cd)pyrene	0.9211	0.250	1.5	0	61.4	47.5	113				
Naphthalene	13.98	1.00	15	0	93.2	70.8	139				

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

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CLIENT: City of Tucson, Environmental Services
Work Order: 06030133
Project: Toole - PAH

ANALYTICAL QC SUMMARY REPORT

TestCode: A_N5506_IH

Sample ID: **LCS** SampType: **LCS** TestCode: **A_N5506_IH** Units: **µg, Total** Prep Date: RunNo: **71818**
Client ID: Batch ID: **R71818** TestNo: **N5506** Analysis Date: **3/25/2006** SeqNo: **856014**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phenanthrene	1.330	0.250	1.5	0	88.7	64.1	144				
Pyrene	1.495	0.250	1.5	0	99.7	65.5	129				

Sample ID: **LCSD** SampType: **LCSD** TestCode: **A_N5506_IH** Units: **µg, Total** Prep Date: RunNo: **71818**
Client ID: Batch ID: **R71818** TestNo: **N5506** Analysis Date: **3/25/2006** SeqNo: **856015**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthene	14.02	2.00	15	0	93.5	59.8	157	14.10	0.574	30	
Acenaphthylene	26.99	2.50	30	0	90.0	69.8	139	27.73	2.70	30	
Anthracene	1.430	0.250	1.5	0	95.3	63	136	1.416	0.967	30	
Benz(a)anthracene	1.293	0.250	1.5	0	36.2	65.2	128	1.290	0.285	30	
Benzo(a)pyrene	1.167	0.250	1.5	0	77.8	49.4	122	1.134	2.92	30	
Benzo(b)fluoranthene	2.347	0.500	3	0	78.2	57.4	125	2.289	2.50	30	
Benzo(g,h,i)perylene	2.121	0.500	3	0	70.7	40.2	113	1.984	6.69	30	
Benzo(k)fluoranthene	1.153	0.250	1.5	0	76.9	59	123	1.120	2.92	30	
Chrysene	1.275	0.250	1.5	0	85.0	55.9	131	1.272	0.266	30	
Dibenz(a,h)anthracene	2.159	0.500	3	0	72.0	51.5	116	2.050	5.17	30	
Fluoranthene	2.622	0.500	3	0	87.4	66.3	129	2.629	0.244	30	
Fluorene	2.758	0.500	3	0	91.9	60.4	147	2.755	0.0965	30	
Indeno(1,2,3-cd)pyrene	0.9871	0.250	1.5	0	65.8	47.5	113	0.9211	6.92	30	
Naphthalene	13.91	1.00	15	0	92.7	70.8	139	13.98	0.496	30	
Phenanthrene	1.322	0.250	1.5	0	88.2	64.1	144	1.330	0.563	30	
Pyrene	1.464	0.250	1.5	0	97.6	65.5	129	1.495	2.13	30	

Qualifiers:
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- H Holding times for preparation or analysis exceeded
- R RPD outside accepted recovery limits
- J Analyte detected below quantitation limits
- S Spike Recovery outside accepted recovery limits

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[ ] North Phoenix - 1501 W. Knudsen, Phoenix, AZ 85027 623.780.4800 - FAX 623.445.6216
[ ] Tucson - 4455 S. Park Ave, Suite 110, Tucson, AZ 85714 520.807.3801 - FAX 520.807.3803
www.aeroenvirolabs.com or call toll-free 866.772.5227

Lab Number: 06030133

Customer Number:	Page ____ of ____
Customer: Mo COT ENV SVCS	Sampler: GIF, MC
Address:	Project Name:
City, State, Zip:	Project Number:
Contact: Molly Collins	P.O. Number:
Phone: 791-5414 Fax: 791-5417	Fax Results: Y N
E-Mail Address:	E-Mail Results: Y N

Sample Receipt

Temperature 4.1 °C
Custody Seals: Yes ____ No X
Custody Seals Intact: Yes ____ No X
Total # of Containers: 2

Turn Around Request

____ 24 Hours ____ 48 Hours
____ 72 Hours
____ 5 working Day
____ Standard 10 Working Days
Subject to scheduling and availability (surcharges apply)

Analyses Requested

Sample Information

Lab #	Media	Flow Rate	Sample Identification	Date	Start	Stop	Final	Receipt	PAHs								
01			TOOLE-P1-031506	3/15/06	1230	1430	1430		X								
02			TOOLE-P2-031506	3/15/06	1230	1430	1430		X								

Instructions / Special Requirements:

Date:	Time:	Samples Relinquished By:	Received By:
3/15/06	1520	GENO FEINSHEE	
3/15/06	1700		FEDEXPRESS
3/16/06	1112		

All services are performed subject to the Terms & Conditions on the reverse side.

Aerotech Environmental Laboratories Sample Receipt Checklist

Project Checked By: UM

Laboratory Number: 06030133	Checklist completed by: 3/15/06 Signature/Date
Client Name: City of Tucson	
Matrix: Air / Carrier Name: Client	Date/Time Rec'd: 3/15/06 1520 By: JF

Temperature of Samples? 4.1 °C *Circle one:* Blue Ice Wet Ice Not Present

	Yes	No*	Not Present
Shipping container/cooler in good condition?	X		
Custody seals intact on shipping container/cooler?			X
Custody seals intact on sample containers?			X
Chain of Custody present and relinquished/received properly?	X		
Chain of Custody agrees with sample labels?	X		
Samples in proper containers/bottles?	X		
Sample containers intact?	X		
All samples received within holding time?	X		
Is there sufficient sample volume to perform the tests?	X		
40mL vials for volatiles & SOCs received with zero headspace?			N/A

Soil Containers:
Brass Sleeve____
Glass Jar____
Methanol____
Plastic Bag____
Encore Samplers____

**See Comment about Chlorine and pH

Total number of bottles received: 2	IH sample media:
If applicable, how many sample bottles were shipped from AEL-Tucson? 2	N/A

Number of containers received by preservative and by sample number: (If more than 15 samples are rec'd, please continue on separate sheet(s))

Preservative	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
A-General	1	1													
B-HNO3															
C-H2SO4															
D-HCl															
E-Na2S2O3															
F-NaOH															
G-Sulfide															
H-Na Sulfite															
I-MCAA															
J-Methanol															
K-HAA															
L-Other															

Water-pH acceptable upon receipt? Yes No N/A

Preservative & pH	pH of samples upon receipt	If pH requires adjustment, list sample number, and reagent ID. number
Metals <2		
Nutrients <2		
Total Phenols <2		
413 (O&G) <2		
418 (TPH) <2		
Cyanide >12		
Sulfide >9		

Any No response must be detailed in the comments section below. Contact the PM immediately to determine how to proceed. Refer to SOP 11-001.04, Section 1.8.6. Continue on back if additional space is needed.

****The holding time for pH and Total Residual Chlorine analysis is immediate. For the most accurate result, the pH and Total Residual Chlorine should be taken in the field within 15 minutes of sampling.***

Comments:

Corrective Action:

Aerotech Environmental, Inc.

REMIT TO: **Aerotech Laboratories, Inc.**
Dept. LA 22359
Pasadena, CA 91185-2359
TEL: (800) 651-4802

INVOICE

INV DATE: *March 31, 2006*
Print DATE: *March 31, 2006*

Invoice No: 73027963

Invoice TO: City of Tucson, Enviro Services
P.O. Box 27450
Tucson, AZ 85726-7450

Attn: Finance/Accounts Payable
Phone: (520) 791-5414

Work Order: 06030133 Order Name Toole - PAH
PO Number: 15454/1 Date Received 3/15/2006

Item	Remarks	Matrix	Qty	Unit Price	Mult	Quoted	Test Total
PAH Kit: 37-mm, 2-um PTFE Filter; XAD-2 Tube		Air	2	$6.00	1	$6.00	$12.00
Polynuclear Aromatic Hydrocarbons in Air		Air	2	$225.00	1	$225.00	$450.00
Pump Rental Charge-Low Volume			2	$25.00	1	$25.00	$50.00

Subtotal:	**$512.00**
Discount:	10.00%
Surcharge:	0.00%
Misc Charges:	$0.00
Payment Received:	$0.00
INVOICE Total:	**$460.80**

Miscellaneous Comments:

All invoices are due and payable net 30 days. Payment must be received by the due date or any discount is void.
We accept VISA, MC, AMEX and DISCOVER. To make payment please call 623.298.1038.

TRANSWEST GEOCHEM

March 22, 2006

RECEIVED

MAR 27 2006

ENVIRONMENTAL SERVICES
100 N. STONE AVE., 2ND FLOOR

Nancy Petersen
City of Tucson, Environmental Services
100 N. Stone, 2nd Floor, W. Side
Tucson, AZ 85701

RE: Toole

Work Order No.: 0603066

Dear Nancy,

Transwest Geochem, Inc. received 3 samples on 3/6/2006 9:20:00 AM for the analyses presented in the following report.

The Case Narrative of this report addresses any Quality Control and/or Quality Assurance issues associated with this Work Order.

If you have any questions regarding these test results, please feel free to call us at (602) 437-0330.

Sincerely,

Elizabeth Proffitt

Beth Proffitt
Project Manager

ADHS License No. AZM133/AZ0133

3725 E. Atlanta Avenue • Phoenix, Arizona 85040 • (602) 437-0330 • (800) 927-5183 • Fax (602) 437-0660
3860 S. Palo Verde Rd. • Suite 301 • Tucson, Arizona 85714 • (520) 573-1061 • Fax

TRANSWEST GEOCHEM

Client: City of Tucson, Environmental Services
Work Order: 0603066
Project Name: Toole
Project Number:

Date Printed: 22-Mar-06

Case Narrative

All method blanks, laboratory spikes, and/or matrix spikes met quality control objectives for the parameters associated with this Work Order except as detailed below or on the Data Qualifier page of this report. Data Qualifiers used in this report are in accordance with ADEQ Arizona Data Qualifiers, Revision 2.0 11/26/2003.

Data qualifiers ("flags") contained within this analytical report have been issued to explain a quality control deficiency, and do not affect the quality (validity) of the data unless noted otherwise in the case narrative.

3725 E. Atlanta Avenue • Phoenix, Arizona 85040 • (602) 437-0330 • (800) 927-5183 • Fax (602) 437-0660
3860 S. Palo Verde Rd. • Suite 301 • Tucson, Arizona 85714 • (520) 573-

TRANSWEST GEOCHEM

Date Printed 20-Mar-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services

Project Name: Toole

Project Number:

Work Order: 0603066

Date Received: 06-Mar-06

Case Narrative
Data Qualifiers

One or more of the following data qualifiers may be associated with your analytical and/or quality control data.

D1 Sample required dilution due to matrix.

D2 Sample required dilution due to high concentration of target analyte.

TRANSWEST GEOCHEM

Date Printed 20-Mar-06
License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Project Name: Toole
Project Number:
Work Order: 0603066
Date Received: 06-Mar-06

Work Order Sample Summary

Client Sample ID	Lab Sample ID	Test Code	Collection Date
Toole-030606-P1	0603066-01A	8021B/8015B	3/6/2006 7:45:00 AM
Toole-030606-P2	0603066-02A	8021B/8015B	3/6/2006 7:50:00 AM
Toole-060606-IN	0603066-03A	8021B/8015B	3/6/2006 7:55:00 AM

Date Printed 20-Mar-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Project Name: Toole
Project Number:
Work Order: 0603066
Date Received: 06-Mar-06

Definitions

Analytical Spike (AS)	The AS is a known amount of a target analyte added to a sample after it has been distilled, digested, or extracted and is ready for analysis. The AS is generally performed if the MS has failed. It is used to indicate interference that arises from sample distillation, digestion, or extraction as opposed to interference that is innate to the matrix.
Continuing Curve Verification (CCV)	The CCV is also referred to as a curve check. This is a standard analyzed at specified intervals during an analysis. The CCV verifies the stability and accuracy of the calibration curve. There are specific CCV recovery acceptance criteria for each method.
Dilution Factor (DF)	The DF is an indication of how much a sample had to be diluted in order to quantitate it on a standard curve. The DF is indicated in the reported sample result. The sample PQL increases as the dilution increases.
Internal Standard (IS)	The IS is a compound that is similar to the organic compound of interest in terms of chemical composition but is unique in that it is rare in the environment. The same concentration of IS is added to every sample for some organic methods.
Laboratory Control Sample (LCS)	The LCS is also referred to as a blank spike. The LCS is an addition of a known amount of a target analyte (from the same source as calibration standards or spikes) to an aliquot of deionized water or other appropriate clean matrix. The LCS is processed through the entire method procedure in the same manner as samples.
Matrix Spike (MS)	The MS is a known amount of a target analyte added to a sample. The MS is processed through the entire method procedure in the same manner as samples.
Method Blank (MB)	The MB is an aliquot of deionized water or other appropriate clean matrix that is thought to be free of the analyte in question. The MB is processed through the entire extraction or analysis procedure and is used to indicate contamination in the lab.
Method Detection Limit (MDL)	The MDL is the lowest level of detection of which a method is capable.
Practical Quantitation Limit (PQL)	The PQL is the lowest value at which Transwest Geochem can detect an analyte in matrix with a high degree of confidence. The PQL will increase as the DF increases. The PQL is greater than or equal to the MDL.
Relative Percent Difference (RPD)	The RPD is a measure of precision (the ability to obtain the same result on re-analysis of the same sample). It is calculated using the result of a sample, MS, LCS, or LCSV and its associated duplicate result.
Secondary Source QC Sample (LCSV)	The LCSV is also referred to as a second source laboratory control sample. It is the same type of standard as a calibration or spiking standard but is obtained from a different source. The LCSV is an indication of the primary standard quality, method performance, and instrument performance.
Surrogate	A surrogate compound is similar to the organic compound of interest in terms of chemical composition but is unique in that it is rare in the environment. When surrogates are used, they are added to every sample, blank and standard. Surrogate recovery is used as an indication of extraction and/or analytical success.
Trip Blank (TB)	The TB is a portion of deionized water preserved in the same manner as the samples. The TB travels from the lab, to the field, and then back to the lab with the samples from the field. The TB serves as an indication of contamination introduced during sample transportation.

Date Printed 20-Mar-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Project Name: Toole
Project Number:
Work Order: 0603066
Date Received: 06-Mar-06

References

Transwest Geochem, Inc. uses the methods outlined in the following references:

Code of Federal Regulations, 40CFR, Part 136, Appendix A, 1998.

Standard Methods for the Examination of Water and Wastewater, 19th Edition, 1995.

Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Revised March 1983.

Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, Revised August 1993.

Methods for the Determination of Metals in Environmental Samples, Supplement 1: EPA/600/R-94/111, Revised May 1994.

Methods for the Determination of Organic Compounds in Drinking Water, EPA/600/4-88/039, Revised July, 1991; EPA-600/4-90/020, Supplement I, July 1990; EPA-600/R-92/129; Supplement II, August 1992; EPA-600/R-95/131, Supplement III, August 1995.

Hach, Water Analysis Handbook, 3rd Edition, 1997.

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition, 1986 including Update I, July 1992; Update IIA, August 1993; Update II; September 1994; Update IIB, January 1995; Update III, December 1996

Bureau of Laboratory Services, State of Arizona Department of Health Services Method 418.1AZ: TPH in Soil, September 1994.

Bureau of Laboratory Services, State of Arizona Department of Health Services Method 8015AZ.R1, September 1998. (Comment: C6-C10 GRO reported by this method is not to be used in compliance situations)

ASTM MethodD4982, Annual Book of ASTM Standards, Volumes 11.01 and 11.02, 1995

The Determination of Polychlorinated Biphenyls in Transformer Fluid and Waste Oils, EPA-600 4-81-045, September 1982.

TRANSWEST GEOCHEM

Date Printed 20-Mar-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0603066
Lab ID: 0603066-01
Project Name: Toole
Project Number:

Client Sample ID: Toole-030606-P1
Collection Date: 3/6/2006 7:45:00 AM
Matrix: Air

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene	**15**	0.50		mg/m³	1.0	8021B/8015B	N/A	3/8/06	MO	ML2060308
Benzene-ppmv	**4.61**	0.16		ppmv	1.00	8021B/8015B	N/A	3/8/06	MO	ML2060308B
Toluene	**43**	5.0	D1	mg/m³	5.0	8021B/8015B	N/A	3/8/06	MO	ML2060308
Toluene-ppmv	**11.41**	1.35	D1	ppmv	5.00	8021B/8015B	N/A	3/8/06	MO	ML2060308B
Ethylbenzene	**41**	5.0	D1	mg/m³	5.0	8021B/8015B	N/A	3/8/06	MO	ML2060308
Ethylbenzene-ppmv	**9.43**	1.15	D1	ppmv	5.00	8021B/8015B	N/A	3/8/06	MO	ML2060308B
Xylenes, total	**180**	7.5	D2	mg/m³	5.0	8021B/8015B	N/A	3/8/06	MO	ML2060308
Xylenes, total-ppmv	**41.65**	1.75	D2	ppmv	5.00	8021B/8015B	N/A	3/8/06	MO	ML2060308B
TVFHC (C6-C10)	**1900**	500	D2	mg/m³	5.0	8021B/8015B	N/A	3/8/06	MO	ML2060308
TVFHC (C6-C10)-ppmv	**463.99**	120.00	D2	ppmv	5.00	8021B/8015B	N/A	3/8/06	MO	ML2060308B
Bromofluorobenzene(Surrogate)	104	70-130		%REC	1.0	8021B/8015B	N/A	3/8/06	MO	ML2060308

TRANSWEST GEOCHEM

Date Printed 20-Mar-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0603066
Lab ID: 0603066-02
Project Name: Toole
Project Number:

Client Sample ID: Toole-030606-P2
Collection Date: 3/6/2006 7:50:00 AM
Matrix: Air

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene	**7.4**	0.50		mg/m³	1.0	8021B/8015B	N/A	3/8/06	MO	ML2060308
Benzene-ppmv	**2.32**	0.16		ppmv	1.00	8021B/8015B	N/A	3/8/06	MO	ML2060308B
Toluene	**3.1**	1.0		mg/m³	1.0	8021B/8015B	N/A	3/8/06	MO	ML2060308
Toluene-ppmv	**0.82**	0.27		ppmv	1.00	8021B/8015B	N/A	3/8/06	MO	ML2060308B
Ethylbenzene	**12**	1.0		mg/m³	1.0	8021B/8015B	N/A	3/8/06	MO	ML2060308
Ethylbenzene-ppmv	**2.81**	0.23		ppmv	1.00	8021B/8015B	N/A	3/8/06	MO	ML2060308B
Xylenes, total	**32**	1.5		mg/m³	1.0	8021B/8015B	N/A	3/8/06	MO	ML2060308
Xylenes, total-ppmv	**7.48**	0.35		ppmv	1.00	8021B/8015B	N/A	3/8/06	MO	ML2060308B
TVFHC (C6-C10)	**1500**	500	D2	mg/m³	5.0	8021B/8015B	N/A	3/8/06	MO	ML2060308
TVFHC (C6-C10)-ppmv	**363.44**	120.00	D2	ppmv	5.00	8021B/8015B	N/A	3/8/06	MO	ML2060308B
Bromofluorobenzene(Surrogate)	97	70-130		%REC	1.0	8021B/8015B	N/A	3/8/06	MO	ML2060308

TRANSWEST GEOCHEM

Date Printed 20-Mar-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0603066
Lab ID: 0603066-03
Project Name: Toole
Project Number:

Client Sample ID: Toole-060606-IN
Collection Date: 3/6/2006 7:55:00 AM
Matrix: Air

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene	**9.4**	1.0	D1	mg/m³	2.0	8021B/8015B	N/A	3/8/06	MO	ML2060308
Benzene-ppmv	**2.95**	0.32	D1	ppmv	2.00	8021B/8015B	N/A	3/8/06	MO	ML2060308B
Toluene	**22**	2.0	D1	mg/m³	2.0	8021B/8015B	N/A	3/8/06	MO	ML2060308
Toluene-ppmv	**5.81**	0.54	D1	ppmv	2.00	8021B/8015B	N/A	3/8/06	MO	ML2060308B
Ethylbenzene	**28**	2.0	D1	mg/m³	2.0	8021B/8015B	N/A	3/8/06	MO	ML2060308
Ethylbenzene-ppmv	**6.47**	0.46	D1	ppmv	2.00	8021B/8015B	N/A	3/8/06	MO	ML2060308B
Xylenes, total	**120**	3.0	D1	mg/m³	2.0	8021B/8015B	N/A	3/8/06	MO	ML2060308
Xylenes, total-ppmv	**27.36**	0.70	D1	ppmv	2.00	8021B/8015B	N/A	3/8/06	MO	ML2060308B
TVFHC (C6-C10)	**1800**	500	D2	mg/m³	5.0	8021B/8015B	N/A	3/8/06	MO	ML2060308
TVFHC (C6-C10)-ppmv	**435.33**	120.00	D2	ppmv	5.00	8021B/8015B	N/A	3/8/06	MO	ML2060308B
Bromofluorobenzene(Surrogate)	92	70-130		%REC	2.0	8021B/8015B	N/A	3/8/06	MO	ML2060308

Date: 20-Mar-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0603066
Project: Toole

QC SUMMARY REPORT

Method Blank

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene-ppmv	<0.16	0.16		ppmv	1	8021B/8015B	N/A	3/8/06	MO	ML2060308B
Toluene-ppmv	<0.27	0.27		ppmv	1	8021B/8015B	N/A	3/8/06	MO	ML2060308B
Ethylbenzene-ppmv	<0.23	0.23		ppmv	1	8021B/8015B	N/A	3/8/06	MO	ML2060308B
Xylenes, total-ppmv	<0.35	0.35		ppmv	1	8021B/8015B	N/A	3/8/06	MO	ML2060308B
TVFHC (C6-C10)-ppmv	<24.00	24.00		ppmv	1	8021B/8015B	N/A	3/8/06	MO	ML2060308B
Benzene	<0.50	0.50		mg/m³	1	8021B/8015B	N/A	3/8/06	MO	ML2060308
Toluene	<1.0	1.0		mg/m³	1	8021B/8015B	N/A	3/8/06	MO	ML2060308
Ethylbenzene	<1.0	1.0		mg/m³	1	8021B/8015B	N/A	3/8/06	MO	ML2060308
Xylenes, total	<1.5	1.5		mg/m³	1	8021B/8015B	N/A	3/8/06	MO	ML2060308
TVFHC (C6-C10)	<100	100		mg/m³	1	8021B/8015B	N/A	3/8/06	MO	ML2060308
Bromofluorobenzene	97	70-130		%REC	1	8021B/8015B	N/A	3/8/06	MO	ML2060308

TRANSWEST GEOCHEM

Date: 20-Mar-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0603066
Project: Toole

QC SUMMARY REPORT

Sample Duplicate

Analyte	Result	PQL	Units	RPD Ref Val	% RPD	RPD Limit	Test Code	Date Prepared	Date Analyzed	Analyst	Qual
Sample ID: **0603084-02AD**		Batch ID:	ML2060308								
Client ID:											
Benzene	<2.5	2.5	mg/m³	<2.5	0%	30	8021B/8015B	N/A	3/8/06	MO	
Toluene	70.73	5.0	mg/m³	69.69	1%	30	8021B/8015B	N/A	3/8/06	MO	
Ethylbenzene	30.97	5.0	mg/m³	30.44	2%	30	8021B/8015B	N/A	3/8/06	MO	
Xylenes, total	215.55	7.5	mg/m³	203.1	6%	30	8021B/8015B	N/A	3/8/06	MO	
TVFHC (C6-C10)	1615	500	mg/m³	1604	1%	30	8021B/8015B	N/A	3/8/06	MO	

TRANSWEST GEOCHEM

Date: 20-Mar-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0603066
Project: Toole

QC SUMMARY REPORT

Blank Spike

Analyte	Result	PQL	SPK value	SPK Ref Val	% Rec	Low Limit	High Limit	RPD Ref Val	% RPD	RPD Limit	Qual
Sample ID: **LCS 3/8**	Batch ID: ML2060308			Test Code: 8021B/8015B				Date Analyzed: 03/08/06 00:00			
				Units: mg/m³				Date Prepared: N/A			
Benzene	5.700	0.50	5.000		114%	70	130				
Toluene	5.500	1.0	5.000		110%	70	130				
Ethylbenzene	5.000	1.0	5.000		100%	70	130				
Xylenes, total	15.58	1.5	15.00		104%	70	130				
TVFHC (C6-C10)	241.4	100	250.0		97%	70	130				
Bromofluorobenzene	9.500	0.50	10.00		95%	70	130				

TRANSWEST GEOCHEM

ML/MO

Sample Receipt Checklist

Client Name: City of Tucson

Date and Time Received: 3/6/06 0920

Work Order Number: 0603066

Checked by: lm

Checklist completed by: Leslie May 3/7/06
Signature / Date

Logged In by: _____
Initials / Date

Matrix: Air Carrier Name: Client KQ Express It

Reviewed by: GP 3/8
Initials / Date

			COMMENTS
Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☐	No ☐	Temp: Ambient Sampled < 2hrs ☐
Water – VOA vials have zero headspace?	Yes ☐	No ☐	N/A ☑
Water – pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
Water – Sulfides present in Cyanide samples?	Yes ☐	No ☐	N/A ☑

Adjusted ? NA Checked by: NA

Client contacted: _____ Date contacted: _____ Person contacted: _____

Contacted by: _____ Regarding: _____

Corrective Action: _____

TRANSWEST GEOCHEM

Sample Receipt Checklist

Client Name: Cot Env. Svc.

Date and Time Received: 3/6/06 9:20

Work Order Number: 0603066

Received by: Richard Mosher

Checklist completed by: Keri Collins 3/6/06
Signature / Date

Logged In by: _____
Initials / Date

Matrix: Air

Carrier Name: Client

Reviewed by: _____
Initials / Date

				COMMENTS
Shipping container/cooler in good condition?	Yes ☒	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☒	
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☒	
Chain of custody present?	Yes ☒	No ☐		
Chain of custody signed when relinquished and received?	Yes ☒	No ☐		
Chain of custody agrees with sample labels?	Yes ☒	No ☐		
Samples in proper container/bottle?	Yes ☒	No ☐	N/A ☐	
Sample containers intact?	Yes ☒	No ☐		
Sufficient sample volume for indicated test?	Yes ☒	No ☐		
All samples received within holding time?	Yes ☒	No ☐		
Container/Temp Blank temperature in compliance?	Yes ☒	No ☐	Temp: Ambient (Air Samples)	
Water – VOA vials have zero headspace?	Yes ☐	No ☐	N/A ☒	
Water – pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☒	
Water – Sulfides present in Cyanide samples?	Yes ☐	No ☐	N/A ☒	

Adjusted ? _____ Checked by: _____

Client contacted: _____ Date contacted: _____ Person contacted: _____

Contacted by: _____ Regarding: _____

Corrective Action: _____

TRANSWEST GEOCHEM

3725 E. Atlanta Ave., Ste 2
Phoenix, Arizona 85040
Phone: (602) 437-0330
Fax: (602) 437-0660

3860 S. Palo Verde Rd., Ste. 301
Tucson, Arizona 85714
Phone: (520) 573-1061
Fax: (520) 573-1063

Chain of Custody

TGI Work Order No: 0603066

Date 3.6.06 Page 1 of 1

Project Manager:	Molly Collins
Client Name:	~~TOOLE~~ COT ENV SVC
Address:	
City, State ZIP:	
Phone:	791-5419 Fax: — 5417

Bill to:	COT ENV. SVCS
Company:	
Address:	
City, State ZIP:	
Phone:	Fax:

P.O. No.:	
Project Name:	TOOLE
Project Number:	

SAMPLE RECEIPT

Temperature:	Amb.	Ice:	
Received Intact:	(Yes) No N/A	(Absent) / Present	
Custody Seals:	Yes (No) N/A	Wet / Blue	
Total No. of Containers:	3		

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Lab ID	No. of Containers	TPH, 8015AZR.1	BTEX (8021B)	Volatile Organics GCMS (624/8260AZ)	SDWA Volatiles, (524.2)	Semi-Volatile Organics GCMS (625/8270)	Organochlorine Pesticides (608/8081)	PCB's, (8082)	PAH, EPA 8310	8 RCRA Metals	Comments
TOOLE 030606 P1	Air	3.6.06	0745	01	1	X	X								
TOOLE 030606 P2	Air	3.6.06	0750	02	1	X	X								
TOOLE 030606 IN	Air	3.6.06	0755	03	1	X	X								

Relinquished by: (Signature)	(Print Name)	Received by: (Signature)	(Print Name)	Date/Time
1	~~GENO FOUSHEE~~	R Mosher	Richard Mosher	3/6/06 09:20
2 Kerri Collins	Kerri Collins		Express It	3/6/06 11:00 15:00 KC
3	Express It	Leslie May	Leslie May	3-7-06 1000

White copy to TGI, Yellow copy for final report, Pink copy to sampler

Revised : 7/21/2004

TRANSWEST GEOCHEM

March 12, 2007

Alison Jones
City of Tucson, Environmental Services
100 N. Stone, 2nd Floor, W. Side
Tucson, AZ 85701

RE: Toole

Work Order No.: 0702583

Dear Alison,

Transwest Geochem, Inc. received 2 samples on 2/23/07. The results of the analyses are presented in the following report.

The Case Narrative of this report addresses any Quality Control and/or Quality Assurance issues associated with this Work Order.

If you have any questions regarding these test results, please feel free to call us at (602) 437-0330.

Sincerely,

Marcia A. Smith
Project Manager

RECEIVED
MAR 13 2007
ENVIRONMENTAL SERVICES
100 N. STONE AVE., 2ND FLOOR

ADHS License No. AZM133/AZ0133

3725 E. Atlanta Avenue • Phoenix, Arizona 85040 • (602) 437-0330 • (800) 927-5183 • Fax (602) 437-0660
3860 S. Palo Verde Rd. • Suite 301 • Tucson, Arizona 85714 • (520) 573-1061 • Fax (520) 573-1063
100% Recycled

TRANSWEST GEOCHEM

Client: City of Tucson, Environmental Services
Work Order: 0702583
Project Name: Toole
Project Number:

Date Printed: 12-Mar-07

Case Narrative

All method blanks, laboratory spikes, and/or matrix spikes met quality control objectives for the parameters associated with this Work Order except as detailed below or on the Data Qualifier page of this report. Data Qualifiers used in this report are in accordance with ADEQ Arizona Data Qualifiers, Revision 2.0 11/26/2003.

Data qualifiers ("flags") contained within this analytical report have been issued to explain a quality control deficiency, and do not affect the quality (validity) of the data unless noted otherwise in the case narrative.

The vapor analysis performed by Transwest Geochem, Inc. is a non-compliance screening method based on a modified EPA method.

Analytical Comments for Method SW8021B, Laboratory Control Spike LCS 2/23, Batch 5GC8070223: The Benzene recovery in the midpoint CCV was at 83.9%, which is slightly below method criteria (85%). The closing CCV, which was within 12 hours of the opening CCV, and all associated QC were within acceptance criteria.

3725 E. Atlanta Avenue • Phoenix, Arizona 85040 • (602) 437-0330 • (800) 927-5183 • Fax (602) 437-0660
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TRANSWEST GEOCHEM

Date Printed 08-Mar-07
License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Project Name: Toole
Project Number:
Work Order: 0702583

Work Order Sample Summary

Client Sample ID	Lab Sample ID	Test Code	Collection Date	Date Received
Toole-022307-IN	0702583-01A	8021B/8015B	2/23/07 07:00 AM	2/23/07 08:20 AM
Toole-022307-EFF	0702583-02A	8021B/8015B	2/23/07 07:05 AM	2/23/07 08:20 AM

Date Printed 08-Mar-07

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Project Name: Toole
Project Number:
Work Order: 0702583
Date Received: 23-Feb-07

Definitions

Analytical Spike (AS)	The AS is a known amount of a target analyte added to a sample after it has been distilled, digested, or extracted and is ready for analysis. The AS is generally performed if the MS has failed. It is used to indicate interference that arises from sample distillation, digestion, or extraction as opposed to interference that is innate to the matrix.
Continuing Curve Verification (CCV)	The CCV is also referred to as a curve check. This is a standard analyzed at specified intervals during an analysis. The CCV verifies the stability and accuracy of the calibration curve. There are specific CCV recovery acceptance criteria for each method.
Dilution Factor (DF)	The DF is an indication of how much a sample had to be diluted in order to quantitate it on a standard curve. The DF is indicated in the reported sample result. The sample PQL increases as the dilution increases.
Internal Standard (IS)	The IS is a compound that is similar to the organic compound of interest in terms of chemical composition but is unique in that it is rare in the environment. The same concentration of IS is added to every sample for some organic methods.
Laboratory Control Sample (LCS)	The LCS is also referred to as a blank spike. The LCS is an addition of a known amount of a target analyte (from the same source as calibration standards or spikes) to an aliquot of deionized water or other appropriate clean matrix. The LCS is processed through the entire method procedure in the same manner as samples.
Matrix Spike (MS)	The MS is a known amount of a target analyte added to a sample. The MS is processed through the entire method procedure in the same manner as samples.
Method Blank (MB)	The MB is an aliquot of deionized water or other appropriate clean matrix that is thought to be free of the analyte in question. The MB is processed through the entire extraction or analysis procedure and is used to indicate contamination in the lab.
Method Detection Limit (MDL)	The MDL is the lowest level of detection of which a method is capable.
Practical Quantitation Limit (PQL)	The PQL is the lowest value at which Transwest Geochem can detect an analyte in matrix with a high degree of confidence. The PQL will increase as the DF increases. The PQL is greater than or equal to the MDL.
Relative Percent Difference (RPD)	The RPD is a measure of precision (the ability to obtain the same result on re-analysis of the same sample). It is calculated using the result of a sample, MS, LCS, or LCSV and its associated duplicate result.
Secondary Source QC Sample (LCSV)	The LCSV is also referred to as a second source laboratory control sample. It is the same type of standard as a calibration or spiking standard but is obtained from a different source. The LCSV is an indication of the primary standard quality, method performance, and instrument performance.
Surrogate	A surrogate compound is similar to the organic compound of interest in terms of chemical composition but is unique in that it is rare in the environment. When surrogates are used, they are added to every sample, blank and standard. Surrogate recovery is used as an indication of extraction and/or analytical success.
Trip Blank (TB)	The TB is a portion of deionized water preserved in the same manner as the samples. The TB travels from the lab, to the field, and then back to the lab with the samples from the field. The TB serves as an indication of contamination introduced during sample transportation.

Date Printed 08-Mar-07
License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Project Name: Toole
Project Number:
Work Order: 0702583
Date Received: 23-Feb-07

References

Transwest Geochem, Inc. uses the methods outlined in the following references:

Code of Federal Regulations, 40CFR, Part 136, Appendix A, 1998.

Standard Methods for the Examination of Water and Wastewater, 19th Edition, 1995.

Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Revised March 1983.

Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, Revised August 1993.

Methods for the Determination of Metals in Environmental Samples, Supplement 1: EPA/600/R-94/111, Revised May 1994.

Methods for the Determination of Organic Compounds in Drinking Water, EPA/600/4-88/039, Revised July, 1991; EPA-600/4-90/020, Supplement I, July 1990; EPA-600/R-92/129; Supplement II, August 1992; EPA-600/R-95/131, Supplement III, August 1995.

Hach, Water Analysis Handbook, 3rd Edition, 1997.

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition, 1986 including Update I, July 1992; Update IIA, August 1993; Update II; September 1994; Update IIB, January 1995; Update III, December 1996

Bureau of Laboratory Services, State of Arizona Department of Health Services Method 418.1AZ: TPH in Soil, September 1994.

Bureau of Laboratory Services, State of Arizona Department of Health Services Method 8015AZ.R1, September 1998. (Comment: C6-C10 GRO reported by this method is not to be used in compliance situations)

ASTM MethodD4982, Annual Book of ASTM Standards, Volumes 11.01 and 11.02, 1995

The Determination of Polychlorinated Biphenyls in Transformer Fluid and Waste Oils, EPA-600 4-81-045, September 1982.

TRANSWEST GEOCHEM

Date Printed 08-Mar-07

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0702583
Lab ID: 0702583-01
Project Name: Toole
Project Number:

Client Sample ID: Toole-022307-IN
Collection Date: 2/23/2007 7:00:00 AM
Matrix: Air

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene	**3.3**	0.50		mg/m³	1.0	8021B/8015B	N/A	2/23/07	JPM	5GC8070223
Benzene-ppmv	**1.03**	0.16		ppmv	1.00	8021B/8015B	N/A	2/23/07	JPM	5GC8070223B
Toluene	**22**	1.0		mg/m³	1.0	8021B/8015B	N/A	2/23/07	JPM	5GC8070223
Toluene-ppmv	**5.93**	0.27		ppmv	1.00	8021B/8015B	N/A	2/23/07	JPM	5GC8070223B
Ethylbenzene	**13**	1.0		mg/m³	1.0	8021B/8015B	N/A	2/23/07	JPM	5GC8070223
Ethylbenzene-ppmv	**2.91**	0.23		ppmv	1.00	8021B/8015B	N/A	2/23/07	JPM	5GC8070223B
Xylenes, total	**52**	1.5		mg/m³	1.0	8021B/8015B	N/A	2/23/07	JPM	5GC8070223
Xylenes, total-ppmv	**12.09**	0.35		ppmv	1.00	8021B/8015B	N/A	2/23/07	JPM	5GC8070223B
TVFHC (C6-C10)	**1100**	100		mg/m³	1.0	8021B/8015B	N/A	2/23/07	JPM	5GC8070223
TVFHC (C6-C10)-ppmv	**274.18**	24.00		ppmv	1.00	8021B/8015B	N/A	2/23/07	JPM	5GC8070223B
Bromofluorobenzene(Surrogate)	138	56-140		%REC	1.0	8021B/8015B	N/A	2/23/07	JPM	5GC8070223

TRANSWEST GEOCHEM

Date Printed 08-Mar-07

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0702583
Lab ID: 0702583-02
Project Name: Toole
Project Number:

Client Sample ID: Toole-022307-EFF
Collection Date: 2/23/2007 7:05:00 AM
Matrix: Air

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene	<0.50	0.50		mg/m³	1.0	8021B/8015B	N/A	2/23/07	JPM	5GC8070223
Benzene-ppmv	<0.16	0.16		ppmv	1.00	8021B/8015B	N/A	2/23/07	JPM	5GC8070223B
Toluene	<1.0	1.0		mg/m³	1.0	8021B/8015B	N/A	2/23/07	JPM	5GC8070223
Toluene-ppmv	<0.27	0.27		ppmv	1.00	8021B/8015B	N/A	2/23/07	JPM	5GC8070223B
Ethylbenzene	<1.0	1.0		mg/m³	1.0	8021B/8015B	N/A	2/23/07	JPM	5GC8070223
Ethylbenzene-ppmv	<0.23	0.23		ppmv	1.00	8021B/8015B	N/A	2/23/07	JPM	5GC8070223B
Xylenes, total	<1.5	1.5		mg/m³	1.0	8021B/8015B	N/A	2/23/07	JPM	5GC8070223
Xylenes, total-ppmv	<0.35	0.35		ppmv	1.00	8021B/8015B	N/A	2/23/07	JPM	5GC8070223B
TVFHC (C6-C10)	<100	100		mg/m³	1.0	8021B/8015B	N/A	2/23/07	JPM	5GC8070223
TVFHC (C6-C10)-ppmv	<24.00	24.00		ppmv	1.00	8021B/8015B	N/A	2/23/07	JPM	5GC8070223B
Bromofluorobenzene(Surrogate)	94	56-140		%REC	1.0	8021B/8015B	N/A	2/23/07	JPM	5GC8070223

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TRANSWEST GEOCHEM

Date: 08-Mar-07

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0702583
Project: Toole

QC SUMMARY REPORT

Method Blank

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene-ppmv	<0.16	0.16		ppmv	1	8021B/8015B	N/A	2/23/07	JPM	5GC8070223B
Toluene-ppmv	<0.27	0.27		ppmv	1	8021B/8015B	N/A	2/23/07	JPM	5GC8070223B
Ethylbenzene-ppmv	<0.23	0.23		ppmv	1	8021B/8015B	N/A	2/23/07	JPM	5GC8070223B
Xylenes, total-ppmv	<0.35	0.35		ppmv	1	8021B/8015B	N/A	2/23/07	JPM	5GC8070223B
TVFHC (C6-C10)-ppmv	<24.00	24.00		ppmv	1	8021B/8015B	N/A	2/23/07	JPM	5GC8070223B
Benzene	<0.50	0.50		mg/m³	1	8021B/8015B	N/A	2/23/07	JPM	5GC8070223B
Toluene	<1.0	1.0		mg/m³	1	8021B/8015B	N/A	2/23/07	JPM	5GC8070223
Ethylbenzene	<1.0	1.0		mg/m³	1	8021B/8015B	N/A	2/23/07	JPM	5GC8070223
Xylenes, total	<1.5	1.5		mg/m³	1	8021B/8015B	N/A	2/23/07	JPM	5GC8070223
TVFHC (C6-C10)	<100	100		mg/m³	1	8021B/8015B	N/A	2/23/07	JPM	5GC8070223
Bromofluorobenzene	115	56-140		%REC	1	8021B/8015B	N/A	2/23/07	JPM	5GC8070223

TRANSWEST GEOCHEM

Date: 08-Mar-07

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0702583
Project: Toole

QC SUMMARY REPORT

Sample Duplicate

Analyte	Result	PQL	Units	RPD Ref Val	% RPD	RPD Limit	Test Code	Date Prepared	Date Analyzed	Analyst	Qual
Sample ID: **0702583-01AD**		Batch ID: 5GC8070223									
Client ID: **Toole-022307-IN**											
Benzene	3.500	0.50	mg/m³	3.300	6%	30	8021B/8015B	N/A	2/23/07	JPM	
Toluene	21.80	1.0	mg/m³	22.30	2%	30	8021B/8015B	N/A	2/23/07	JPM	
Ethylbenzene	11.90	1.0	mg/m³	12.60	6%	30	8021B/8015B	N/A	2/23/07	JPM	
Xylenes, total	48.5	1.5	mg/m³	52.41	8%	30	8021B/8015B	N/A	2/23/07	JPM	
TVFHC (C6-C10)	1132	100	mg/m³	1121	1%	30	8021B/8015B	N/A	2/23/07	JPM	

TRANSWEST GEOCHEM

Sample Receipt Checklist

Client Name: COT- Bnu. Svcs.

Date and Time Received: 2/23/07 8:20

Work Order Number: 0702583

Received by: Richard Mosher

Checklist completed by: Jeni Collins 2/23/07
Signature / Date

Logged In by: _____
Initials / Date

Matrix: Air

Carrier Name: Client

Reviewed by: _____
Initials / Date

				COMMENTS
Shipping container/cooler in good condition?	Yes ☐	No ☐	Not Present ☒	
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☒	
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☒	
Chain of custody present?	Yes ☒	No ☐		
Chain of custody signed when relinquished and received?	Yes ☒	No ☐		
Chain of custody agrees with sample labels?	Yes ☒	No ☐		
Samples in proper container/bottle?	Yes ☒	No ☐	N/A ☐	
Sample containers intact?	Yes ☒	No ☐		
Sufficient sample volume for indicated test?	Yes ☒	No ☐		
All samples received within holding time?	Yes ☒	No ☐		
Container/Temp Blank temperature in compliance?	Yes ☒	No ☐	Temp: Ambient	* Air Samples
Water – VOA vials have zero headspace?	Yes ☐	No ☐	N/A ☒	
Water – pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☒	
Water – Sulfides present in Cyanide samples?	Yes ☐	No ☐	N/A ☒	

Adjusted ? _____ Checked by: _____

Client contacted: _____ Date contacted: _____ Person contacted: _____

Contacted by: _____ Regarding: _____

Corrective Action: _____

Storage Location: JM

TRANSWEST GEOCHEM

Sample Receipt Checklist

Client Name: City of Tucson

Date and Time Received: 2/23/07 1500

Work Order Number: 0709 583

Checked by: EP

Checklist completed by: Leslie May 2/23/07
Signature / Date

Logged In by: [illegible] 2.23.07
Initials / Date

Matrix: Air Carrier Name: Client TGI Express It

Reviewed by: [illegible] 3/5/07
Initials / Date

				COMMENTS
Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑	
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Container/Temp Blank temperature in compliance?	Yes ☐	No ☐	Temp: Amb	Sampled < 2hrs ☐
Water – VOA vials have zero headspace?	Yes ☐	No ☐	N/A ☑	
Water – pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	Checked by: _____
Water – Sulfides present in Cyanide samples?	Yes ☐	No ☐	N/A ☑	
Samples considered Drinking Water for metal analysis?	Yes ☐	No ☐	N/A ☑	

Client contacted: _____ Date contacted: _____ Person contacted: _____

Contacted by: _____ Regarding: _____

Corrective Action: _____

TRANSWEST GEOCHEM

3725 E. Atlanta Ave.
Phoenix, Arizona 85040
Phone: (602) 437-0330
Fax: (602) 437-0660

3860 S. Palo Verde Rd., Ste. 301
Tucson, Arizona 85714
Phone: (520) 573-1061
Fax: (520) 573-1063

Chain of Custody

TGI Work Order No: 0702583

Date 2/23/07 Page 1 of 1

Project Manager:	Molly Collins
Client Name:	COT - ENV SVCS
Address:	
City, State, Zip:	
Phone:	791-7414 Fax: 791-5915

Bill To:	COT
Company:	
Address:	
City, State, Zip:	
Phone:	Fax:

P.O. No:	
Project Name:	Toole
Project Number:	

SAMPLE RECEIPT

Temperature:	Amb	Ice:	
Received Intact:	Yes (Yes) No N/A	Absent / Present	
Custody Seals:	Yes No (No) N/A	Wet / Blue	
Total No. of Containers:	2	Sampled <2 hrs ago	

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Lab ID	No. of Containers	TPH, (8015AZR.1)	BTEX (8021B)	Volatile Organics GCMS (624/8260B)	SDWA Volatiles, (524.2)	Semi-Volatile Organics GCMS (625/8270)	Organochlorine Pesticides (608/8081)	PCB's, (8082)	PAH, EPA (8310)	8 RCRA Metals	Comments
Toole-022307-IN	AIR	2/22 2007	0700	01	1	X	X								
Toole-022307-EAF	AIR	2/23	0705	02	1	X	X								

Relinquished by: (Signature)	(Print Name)	Received by: (Signature)	(Print Name)	Date / Time
1	Gene Fouchee	R Mosher	R Mosher	2/23/07 08:20
2 Terri Collins	Terri Collins		Express It	2/23/07 11:00
3	Express It.		Elizabeth Potras	2/23/07 15:00

White copy to TGI, Yellow copy for final report, Pink copy to sampler

Revised: 3/6/06

TRANSWEST GEOCHEM

3725 E. Atlanta Ave.
Phoenix, Arizona 85040
Phone: (602) 437-0330
Fax: (602) 437-0660

3860 S. Palo Verde Rd., Ste. 301
Tucson, Arizona 85714
Phone: (520) 573-1061
Fax: (520) 573-1063

Chain of Custody

TGI Work Order No: 0702583

Date 2/23/07 Page 1 of 1

Project Manager:	Molly Collins
Client Name:	COT - ENV SVCS
Address:	
City, State, Zip:	
Phone:	791-7414 Fax: 791-5415

Bill To:	COT
Company:	
Address:	
City, State, Zip:	
Phone:	Fax:

P.O. No:	
Project Name:	Toole
Project Number:	

SAMPLE RECEIPT

Temperature:	Amb		Ice:	
Received Intact:	Yes	No	N/A	Absent / Present
Custody Seals:	Yes	No	N/A	Wet / Blue
Total No. of Containers:	2			Sampled <2 hrs ago

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Lab ID	No. of Containers	TPH, (8015AZR.1)	BTEX (8021B)	Volatile Organics GCMS (624/8260B)	SDWA Volatiles, (524.2)	Semi-Volatile Organics GCMS (625/8270)	Organochlorine Pesticides (608/8081)	PCB's, (8082)	PAH, EPA (8310)	8 RCRA Metals	Comments
Toole-022307-IN	AIR	2/23	0700	01	1	X	X								
Toole-022307-EFF	AIR	2/23	0705	02	1	X	X								

Relinquished by: (Signature)	(Print Name)	Received by: (Signature)	(Print Name)	Date / Time
1	GENO FOUSHEE	R Mosher	R MOSHER	2/23/07 08:20
2 Terri Collins	Terri Collins		Express It	2/23/07 11:00
3	Express It.		Elizabeth Potros	2/23/07 15:00

White copy to TGI, Yellow copy for final report, Pink copy to sampler

Revised: 3/6/06

TRANSWEST GEOCHEM

February 20, 2006

Nancy Petersen
City of Tucson, Environmental Services
100 N. Stone, 2nd Floor, W. Side
Tucson, AZ 85701

RECEIVED
FEB 22 2006
ENVIRONMENTAL SERVICES
100 N. STONE AVE., 2ND FLOOR

RE: Toole Ave

Work Order No.: 0602120

Dear Nancy,

Transwest Geochem, Inc. received 1 sample on 2/8/2006 10:35:00 AM for the analyses presented in the following report.

The Case Narrative of this report addresses any Quality Control and/or Quality Assurance issues associated with this Work Order.

If you have any questions regarding these test results, please feel free to call us at (602) 437-0330.

Sincerely,

Beth Proffitt
Project Manager

ADHS License No. AZM133/AZ0133

3725 E. Atlanta Ave. • Suite 2 • Phoenix, Arizona 85040 • (602) 437-0330 • 1-800-927-5183 • Fax (602) 437-0660
3860 S. Palo Verde Rd. • Suite 301 • Tucson, Arizona 85714 • (520) 573-1061 • Fax (520) 573-

TRANSWEST GEOCHEM

Client: City of Tucson, Environmental Services
Work Order: 0602120
Project Name: Toole Ave
Project Number:

Date Printed: 20-Feb-06

Case Narrative

All method blanks, laboratory spikes, and sample duplicates met quality control objectives for the parameters associated with this Work Order except as detailed below or on the Data Qualifier page of this report. Data Qualifiers used in this report are in accordance with ADEQ Arizona Data Qualifiers, Revision 1.0 05/13/2002.

Data qualifiers ("flags") contained within this analytical report have been issued to explain a quality control deficiency, and do not affect the quality (validity) of the data unless noted otherwise in the case narrative.

The vapor analysis performed by Transwest Geochem, Inc. is a screening technique based on a modified EPA method. This data is not to be used in compliance situations.

3725 E. Atlanta Ave. • Suite 2 • Phoenix, Arizona 85040 • (602) 437-0330 • 1-800-927-5183 • Fax (602)
3860 S. Palo Verde Rd. • Suite 301 • T

TRANSWEST GEOCHEM

Date Printed 20-Feb-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Project Name: Toole Ave
Project Number:
Work Order: 0602120
Date Received: 08-Feb-06

Case Narrative
Data Qualifiers

One or more of the following data qualifiers may be associated with your analytical and/or quality control data.

D1 Sample required dilution due to matrix.
D2 Sample required dilution due to high concentration of target analyte.

TRANSWEST GEOCHEM

Date Printed 20-Feb-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Project Name: Toole Ave
Project Number:
Work Order: 0602120
Date Received: 08-Feb-06

Work Order Sample Summary

Client Sample ID	Lab Sample ID	Test Code	Collection Date
Toole-In	0602120-01A	8021B/8015B	2/8/2006 8:50:00 AM

TRANSWEST GEOCHEM

Date Printed 20-Feb-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Project Name: Toole Ave
Project Number:
Work Order: 0602120
Date Received: 08-Feb-06

Definitions

Analytical Spike (AS)	The AS is a known amount of a target analyte added to a sample after it has been distilled, digested, or extracted and is ready for analysis. The AS is generally performed if the MS has failed. It is used to indicate interference that arises from sample distillation, digestion, or extraction as opposed to interference that is innate to the matrix.
Continuing Curve Verification (CCV)	The CCV is also referred to as a curve check. This is a standard analyzed at specified intervals during an analysis. The CCV verifies the stability and accuracy of the calibration curve. There are specific CCV recovery acceptance criteria for each method.
Dilution Factor (DF)	The DF is an indication of how much a sample had to be diluted in order to quantitate it on a standard curve. The DF is indicated in the reported sample result. The sample PQL increases as the dilution increases.
Internal Standard (IS)	The IS is a compound that is similar to the organic compound of interest in terms of chemical composition but is unique in that it is rare in the environment. The same concentration of IS is added to every sample for some organic methods.
Laboratory Control Sample (LCS)	The LCS is also referred to as a blank spike. The LCS is an addition of a known amount of a target analyte (from the same source as calibration standards or spikes) to an aliquot of deionized water or other appropriate clean matrix. The LCS is processed through the entire method procedure in the same manner as samples.
Matrix Spike (MS)	The MS is a known amount of a target analyte added to a sample. The MS is processed through the entire method procedure in the same manner as samples.
Method Blank (MB)	The MB is an aliquot of deionized water or other appropriate clean matrix that is thought to be free of the analyte in question. The MB is processed through the entire extraction or analysis procedure and is used to indicate contamination in the lab.
Method Detection Limit (MDL)	The MDL is the lowest level of detection of which a method is capable.
Practical Quantitation Limit (PQL)	The PQL is the lowest value at which Transwest Geochem can detect an analyte in matrix with a high degree of confidence. The PQL will increase as the DF increases. The PQL is greater than or equal to the MDL.
Relative Percent Difference (RPD)	The RPD is a measure of precision (the ability to obtain the same result on re-analysis of the same sample). It is calculated using the result of a sample, MS, LCS, or LCSV and its associated duplicate result.
Secondary Source QC Sample (LCSV)	The LCSV is also referred to as a second source laboratory control sample. It is the same type of standard as a calibration or spiking standard but is obtained from a different source. The LCSV is an indication of the primary standard quality, method performance, and instrument performance.
Surrogate	A surrogate compound is similar to the organic compound of interest in terms of chemical composition but is unique in that it is rare in the environment. When surrogates are used, they are added to every sample, blank and standard. Surrogate recovery is used as an indication of extraction and/or analytical success.
Trip Blank (TB)	The TB is a portion of deionized water preserved in the same manner as the samples. The TB travels from the lab, to the field, and then back to the lab with the samples from the field. The TB serves as an indication of contamination introduced during sample transportation.

TRANSWEST GEOCHEM

Date Printed 20-Feb-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Project Name: Toole Ave
Project Number:
Work Order: 0602120
Date Received: 08-Feb-06

References

Transwest Geochem, Inc. uses the methods outlined in the following references:

Code of Federal Regulations, 40CFR, Part 136, Appendix A, 1998.

Standard Methods for the Examination of Water and Wastewater, 19th Edition, 1995.

Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Revised March 1983.

Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, Revised August 1993.

Methods for the Determination of Metals in Environmental Samples, Supplement 1: EPA/600/R-94/111, Revised May 1994.

Methods for the Determination of Organic Compounds in Drinking Water, EPA/600/4-88/039, Revised July, 1991; EPA-600/4-90/020, Supplement I, July 1990; EPA-600/R-92/129; Supplement II, August 1992; EPA-600/R-95/131, Supplement III, August 1995.

Hach, Water Analysis Handbook, 3rd Edition, 1997.

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition, 1986 including Update I, July 1992; Update IIA, August 1993; Update II; September 1994; Update IIB, January 1995; Update III, December 1996

Bureau of Laboratory Services, State of Arizona Department of Health Services Method 418.1AZ: TPH in Soil, September 1994.

Bureau of Laboratory Services, State of Arizona Department of Health Services Method 8015AZ.R1, September 1998. (Comment: C6-C10 GRO reported by this method is not to be used in compliance situations)

ASTM MethodD4982, Annual Book of ASTM Standards, Volumes 11.01 and 11.02, 1995

The Determination of Polychlorinated Biphenyls in Transformer Fluid and Waste Oils, EPA-600 4-81-045, September 1982.

TRANSWEST GEOCHEM

Date Printed 20-Feb-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0602120
Lab ID: 0602120-01
Project Name: Toole Ave
Project Number:

Client Sample ID: Toole-In
Collection Date: 2/8/2006 8:50:00 AM
Matrix: Soil Vapor

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene	**14**	1.0	D1	mg/m³	2.0	8021B/8015B	N/A	2/9/06	MO	ML2060209
Benzene-ppmv	**4.32**	0.32	D1	ppmv	2.00	8021B/8015B	N/A	2/9/06	MO	ML2060209B
Toluene	**31**	2.0	D1	mg/m³	2.0	8021B/8015B	N/A	2/9/06	MO	ML2060209
Toluene-ppmv	**8.16**	0.54	D1	ppmv	2.00	8021B/8015B	N/A	2/9/06	MO	ML2060209B
Ethylbenzene	**35**	2.0	D1	mg/m³	2.0	8021B/8015B	N/A	2/9/06	MO	ML2060209
Ethylbenzene-ppmv	**8.03**	0.46	D1	ppmv	2.00	8021B/8015B	N/A	2/9/06	MO	ML2060209B
Xylenes, total	**140**	3.0	D1	mg/m³	2.0	8021B/8015B	N/A	2/9/06	MO	ML2060209
Xylenes, total-ppmv	**31.55**	0.70	D1	ppmv	2.00	8021B/8015B	N/A	2/9/06	MO	ML2060209B
TVFHC (C6-C10)	**2200**	500	D2	mg/m³	5.0	8021B/8015B	N/A	2/9/06	MO	ML2060209
TVFHC (C6-C10)-ppmv	**539.19**	120.00	D2	ppmv	5.00	8021B/8015B	N/A	2/9/06	MO	ML2060209B
Bromofluorobenzene(Surrogate)	96	70-130		%REC	2.0	8021B/8015B	N/A	2/9/06	MO	ML2060209

TRANSWEST GEOCHEM

Date: 20-Feb-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0602120
Project: Toole Ave

QC SUMMARY REPORT

Method Blank

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene-ppmv	<0.16	0.16		ppmv	1	8021B/8015B	N/A	2/9/06	MO	ML2060209B
Toluene-ppmv	<0.27	0.27		ppmv	1	8021B/8015B	N/A	2/9/06	MO	ML2060209B
Ethylbenzene-ppmv	<0.23	0.23		ppmv	1	8021B/8015B	N/A	2/9/06	MO	ML2060209B
Xylenes, total-ppmv	<0.35	0.35		ppmv	1	8021B/8015B	N/A	2/9/06	MO	ML2060209B
TVFHC (C6-C10)-ppmv	<24.00	24.00		ppmv	1	8021B/8015B	N/A	2/9/06	MO	ML2060209B
Benzene	<0.50	0.50		mg/m³	1	8021B/8015B	N/A	2/9/06	MO	ML2060209
Toluene	<1.0	1.0		mg/m³	1	8021B/8015B	N/A	2/9/06	MO	ML2060209
Ethylbenzene	<1.0	1.0		mg/m³	1	8021B/8015B	N/A	2/9/06	MO	ML2060209
Xylenes, total	<1.5	1.5		mg/m³	1	8021B/8015B	N/A	2/9/06	MO	ML2060209
TVFHC (C6-C10)	<100	100		mg/m³	1	8021B/8015B	N/A	2/9/06	MO	ML2060209
Bromofluorobenzene	87	70-130		%REC	1	8021B/8015B	N/A	2/9/06	MO	ML2060209

TRANSWEST GEOCHEM

Date: 20-Feb-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0602120
Project: Toole Ave

QC SUMMARY REPORT

Sample Duplicate

Sample ID: **0602120-01AD** Batch ID: ML2060209
Client ID: **Toole-In**

Analyte	Result	PQL	Units	RPD Ref Val	% RPD	RPD Limit	Test Code	Date Prepared	Date Analyzed	Analyst	Qual
Benzene	13.37	1.0	mg/m³	13.78	3%	30	8021B/8015B	N/A	2/9/06	MO	
Toluene	31.00	2.0	mg/m³	30.71	1%	30	8021B/8015B	N/A	2/9/06	MO	
Ethylbenzene	34.98	2.0	mg/m³	34.81	0%	30	8021B/8015B	N/A	2/9/06	MO	
Xylenes, total	135.05	3.0	mg/m³	136.8	1%	30	8021B/8015B	N/A	2/9/06	MO	
TVFHC (C6-C10)	2369	500	mg/m³	2205	7%	30	8021B/8015B	N/A	2/9/06	MO	

TRANSWEST GEOCHEM

Date: 20-Feb-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0602120
Project: Toole Ave

QC SUMMARY REPORT

Blank Spike

Analyte	Result	PQL	SPK value	SPK Ref Val	% Rec	Low Limit	High Limit	RPD Ref Val	% RPD	RPD Limit	Qual
Sample ID: **LCS 2/9**	Batch ID: ML2060209			Test Code: 8021B/8015B				Date Analyzed: 02/09/06 00:00			
				Units mg/m³				Date Prepared: N/A			
Benzene	5.700	0.50	5.000		114%	70	130				
Toluene	5.600	1.0	5.000		112%	70	130				
Ethylbenzene	5.200	1.0	5.000		104%	70	130				
Xylenes, total	15.562	1.5	15.00		104%	70	130				
TVFHC (C6-C10)	237.0	100	250.0		95%	70	130				
Bromofluorobenzene	8.700	0.50	10.00		87%	70	130				

TRANSWEST GEOCHEM

Mo

Sample Receipt Checklist

Client Name: Tucson

Date and Time Received: 2/9/06 8:30

Work Order Number: C602120

Checked by: SK

Checklist completed by: MA 2/9/06
Signature / Date

Logged In by: SA 2/9/06
Initials / Date

Matrix: Vapor Carrier Name: Client KQ Express FT

Reviewed by: MA 2/10/06
Initials / Date

				COMMENTS
Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑	
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Container/Temp Blank temperature in compliance?	Yes ☐	No ☐	Temp: Ambient (cooler 2.1°)	Sampled < 2hrs ☐
Water – VOA vials have zero headspace?	Yes ☐	No ☐	N/A ☑	
Water – pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	
Water – Sulfides present in Cyanide samples?	Yes ☐	No ☐	N/A ☑	

Adjusted ? MA Checked by: MA

Client contacted: _____ Date contacted: _____ Person contacted: _____

Contacted by: _____ Regarding: _____

Corrective Action: _____

TRANSWEST GEOCHEM

Sample Receipt Checklist

Client Name: COT-E.S.

Date and Time Received: 2/8/06 10:35

Work Order Number: 0602120

Received by: Keith Kanala

Checklist completed by: Keith K. 2/8/06
Signature / Date

Logged In by: _____
Initials / Date

Matrix: Air

Carrier Name: Verdad.

Reviewed by: _____
Initials / Date

				COMMENTS
Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑	
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐	N/A ☐	
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	Temp: ~~10~~ KK 23.4°C → Tedlar Bag	
Water – VOA vials have zero headspace?	Yes ☐	No ☐	N/A ☑	
Water – pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	
Water – Sulfides present in Cyanide samples?	Yes ☐	No ☐	N/A ☑	

Adjusted ? _____ Checked by: _____

Client contacted: _____ Date contacted: _____ Person contacted: _____

Contacted by: _____ Regarding: _____

Corrective Action: _____

TRANSWEST GEOCHEM
3725 E. Atlanta Ave., Ste 2
Phoenix, Arizona 85040
Phone: (602) 437-0330
Fax: (602) 437-0660

3860 S. Palo Verde Rd., Ste. 301
Tucson, Arizona 85714
Phone: (520) 573-1061
Fax: (520) 573-1063

Chain of Custody

TGI Work Order No: 0602120

Date 2/8/06 Page 1 of 1

Project Manager:	Molly Collins
Client Name:	COT ES
Address:	
City, State ZIP:	
Phone:	Fax:

Bill to:	COT ES
Company:	
Address:	
City, State ZIP:	
Phone:	Fax:

P.O. No.:	
Project Name:	Toole Ave
Project Number:	

SAMPLE RECEIPT

Temperature:	23.4°C	Ice:
Received Intact:	(Yes) No N/A	(Absent) / Present
Custody Seals:	Yes (No) N/A	Wet / Blue
Total No. of Containers:	1	

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Lab ID	No. of Containers	TPH, 8015AZR.1	BTEX (8021B)	Volatile Organics GCMS (624/8260AZ)	SDWA Volatiles, (524.2)	Semi-Volatile Organics GCMS (625/8270)	Organochlorine Pesticides (608/8081)	PCB's, (8082)	PAH, EPA 8310	8 RCRA Metals	Comments
Toole-IN	VA	2/8	0850	01	1	X	X								

Relinquished by: (Signature)	(Print Name)	Received by: (Signature)	(Print Name)	Date/Time
1 Matt Wallace	Matt Wallace	Keith Konola	Keith Konola	2/8/06 10:35
2 Keith Konola	Keith Konola		Express It	2/8/06 15:00
3	Express It	[signature]	Skip Harden	2/9/06 8:30 → 2.1

White copy to TGI, Yellow copy for final report, Pink copy to sampler

Revised : 7/21/2004

TRANSWEST GEOCHEM

February 20, 2006

Nancy Petersen
City of Tucson, Environmental Services
100 N. Stone, 2nd Floor, W. Side
Tucson, AZ 85701

RECEIVED
FEB 22 2006
ENVIRONMENTAL SERVICES
100 N. STONE AVE., 2ND FLOOR

RE: Toole

Work Order No.: 0601378

Dear Nancy,

Transwest Geochem, Inc. received 2 samples on 1/25/2006 9:10:00 AM for the analyses presented in the following report.

The Case Narrative of this report addresses any Quality Control and/or Quality Assurance issues associated with this Work Order.

If you have any questions regarding these test results, please feel free to call us at (602) 437-0330.

Sincerely,

Elizabeth Proffitt

Beth Proffitt
Project Manager

ADHS License No. AZM133/AZ0133

3725 E. Atlanta Ave. • Suite 2 • Phoenix, Arizona 85040 • (602) 437-0330 • 1-800-927-5183 • Fax (602) 437-0660
3860 S. Palo Verde Rd. • Suite 301 • Tucson, Arizona 85714 • (520) 573-1061 • Fax (520) 573-1062

TRANSWEST GEOCHEM

Client: City of Tucson, Environmental Services
Work Order: 0601378
Project Name: Toole
Project Number:

Date Printed: 20-Feb-06

Case Narrative

All method blanks, laboratory spikes, and/or matrix spikes met quality control objectives for the parameters associated with this Work Order except as detailed below or on the Data Qualifier page of this report. Data Qualifiers used in this report are in accordance with ADEQ Arizona Data Qualifiers, Revision 2.0 11/26/2003.

Data qualifiers ("flags") contained within this analytical report have been issued to explain a quality control deficiency, and do not affect the quality (validity) of the data unless noted otherwise in the case narrative.

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3860 S. Palo Verde Rd. • Suite 301 • Tucson, Arizona 85714 • (520) 573-1[illegible]

TRANSWEST GEOCHEM

Date Printed 20-Feb-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services

Project Name: Toole

Project Number:

Work Order: 0601378

Date Received: 25-Jan-06

Case Narrative
Data Qualifiers

One or more of the following data qualifiers may be associated with your analytical and/or quality control data.

D1 Sample required dilution due to matrix.

D2 Sample required dilution due to high concentration of target analyte.

TRANSWEST GEOCHEM

Date Printed 20-Feb-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Project Name: Toole
Project Number:
Work Order: 0601378
Date Received: 25-Jan-06

Work Order Sample Summary

Client Sample ID	Lab Sample ID	Test Code	Collection Date
Toole-IN-012506	0601378-01A	8021B/8015B	1/25/2006 7:50:00 AM
Toole-EFF-012506	0601378-02A	8021B/8015B	1/25/2006 7:55:00 AM

Date Printed 20-Feb-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Project Name: Toole
Project Number:
Work Order: 0601378
Date Received: 25-Jan-06

Definitions

Analytical Spike (AS)	The AS is a known amount of a target analyte added to a sample after it has been distilled, digested, or extracted and is ready for analysis. The AS is generally performed if the MS has failed. It is used to indicate interference that arises from sample distillation, digestion, or extraction as opposed to interference that is innate to the matrix.
Continuing Curve Verification (CCV)	The CCV is also referred to as a curve check. This is a standard analyzed at specified intervals during an analysis. The CCV verifies the stability and accuracy of the calibration curve. There are specific CCV recovery acceptance criteria for each method.
Dilution Factor (DF)	The DF is an indication of how much a sample had to be diluted in order to quantitate it on a standard curve. The DF is indicated in the reported sample result. The sample PQL increases as the dilution increases.
Internal Standard (IS)	The IS is a compound that is similar to the organic compound of interest in terms of chemical composition but is unique in that it is rare in the environment. The same concentration of IS is added to every sample for some organic methods.
Laboratory Control Sample (LCS)	The LCS is also referred to as a blank spike. The LCS is an addition of a known amount of a target analyte (from the same source as calibration standards or spikes) to an aliquot of deionized water or other appropriate clean matrix. The LCS is processed through the entire method procedure in the same manner as samples.
Matrix Spike (MS)	The MS is a known amount of a target analyte added to a sample. The MS is processed through the entire method procedure in the same manner as samples.
Method Blank (MB)	The MB is an aliquot of deionized water or other appropriate clean matrix that is thought to be free of the analyte in question. The MB is processed through the entire extraction or analysis procedure and is used to indicate contamination in the lab.
Method Detection Limit (MDL)	The MDL is the lowest level of detection of which a method is capable.
Practical Quantitation Limit (PQL)	The PQL is the lowest value at which Transwest Geochem can detect an analyte in matrix with a high degree of confidence. The PQL will increase as the DF increases. The PQL is greater than or equal to the MDL.
Relative Percent Difference (RPD)	The RPD is a measure of precision (the ability to obtain the same result on re-analysis of the same sample). It is calculated using the result of a sample, MS, LCS, or LCSV and its associated duplicate result.
Secondary Source QC Sample (LCSV)	The LCSV is also referred to as a second source laboratory control sample. It is the same type of standard as a calibration or spiking standard but is obtained from a different source. The LCSV is an indication of the primary standard quality, method performance, and instrument performance.
Surrogate	A surrogate compound is similar to the organic compound of interest in terms of chemical composition but is unique in that it is rare in the environment. When surrogates are used, they are added to every sample, blank and standard. Surrogate recovery is used as an indication of extraction and/or analytical success.
Trip Blank (TB)	The TB is a portion of deionized water preserved in the same manner as the samples. The TB travels from the lab, to the field, and then back to the lab with the samples from the field. The TB serves as an indication of contamination introduced during sample transportation.

References

Transwest Geochem, Inc. uses the methods outlined in the following references:

Code of Federal Regulations, 40CFR, Part 136, Appendix A, 1998.

Standard Methods for the Examination of Water and Wastewater, 19th Edition, 1995.

Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Revised March 1983.

Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, Revised August 1993.

Methods for the Determination of Metals in Environmental Samples, Supplement 1: EPA/600/R-94/111, Revised May 1994.

Methods for the Determination of Organic Compounds in Drinking Water, EPA/600/4-88/039, Revised July, 1991; EPA-600/4-90/020, Supplement I, July 1990; EPA-600/R-92/129; Supplement II, August 1992; EPA-600/R-95/131, Supplement III, August 1995.

Hach, Water Analysis Handbook, 3rd Edition, 1997.

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition, 1986 including Update I, July 1992; Update IIA, August 1993; Update II; September 1994; Update IIB, January 1995; Update III, December 1996

Bureau of Laboratory Services, State of Arizona Department of Health Services Method 418.1AZ: TPH in Soil, September 1994.

Bureau of Laboratory Services, State of Arizona Department of Health Services Method 8015AZ.R1, September 1998. (Comment: C6-C10 GRO reported by this method is not to be used in compliance situations)

ASTM MethodD4982, Annual Book of ASTM Standards, Volumes 11.01 and 11.02, 1995

The Determination of Polychlorinated Biphenyls in Transformer Fluid and Waste Oils, EPA-600 4-81-045, September 1982.

TRANSWEST GEOCHEM

Date Printed 20-Feb-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0601378
Lab ID: 0601378-01
Project Name: Toole
Project Number:

Client Sample ID: Toole-IN-012506
Collection Date: 1/25/2006 7:50:00 AM
Matrix: Air

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene	**19**	1.0	D1	mg/m³	2.0	8021B/8015B	N/A	1/28/06	BK	3GC6060128V
Benzene-ppmv	**5.89**	0.32	D1	ppmv	2.00	8021B/8015B	N/A	1/28/06	BK	3GC6060128N
Toluene	**43**	2.0	D1	mg/m³	2.0	8021B/8015B	N/A	1/28/06	BK	3GC6060128V
Toluene-ppmv	**11.43**	0.54	D1	ppmv	2.00	8021B/8015B	N/A	1/28/06	BK	3GC6060128N
Ethylbenzene	**41**	2.0	D1	mg/m³	2.0	8021B/8015B	N/A	1/28/06	BK	3GC6060128V
Ethylbenzene-ppmv	**9.44**	0.46	D1	ppmv	2.00	8021B/8015B	N/A	1/28/06	BK	3GC6060128N
Xylenes, total	**160**	3.0	D2	mg/m³	2.0	8021B/8015B	N/A	1/28/06	BK	3GC6060128V
Xylenes, total-ppmv	**36.11**	0.70	D1	ppmv	2.00	8021B/8015B	N/A	1/28/06	BK	3GC6060128N
TVFHC (C6-C10)	**3300**	400	D2	mg/m³	4.0	8021B/8015B	N/A	1/28/06	BK	3GC6060128V
TVFHC (C6-C10)-ppmv	**812.38**	96.00	D2	ppmv	4.00	8021B/8015B	N/A	1/28/06	BK	3GC6060128N
Bromofluorobenzene(Surrogate)	117	70-130		%REC	2.0	8021B/8015B	N/A	1/28/06	BK	3GC6060128V

TRANSWEST GEOCHEM

Date Printed 20-Feb-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0601378
Lab ID: 0601378-02
Project Name: Toole
Project Number:

Client Sample ID: Toole-EFF-012506
Collection Date: 1/25/2006 7:55:00 AM
Matrix: Air

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene	<0.50	0.50		mg/m³	1.0	8021B/8015B	N/A	1/27/06	JPM	6GC012706A
Benzene-ppmv	<0.16	0.16		ppmv	1.00	8021B/8015B	N/A	1/27/06	JPM	6GC012706AB
Toluene	<1.0	1.0		mg/m³	1.0	8021B/8015B	N/A	1/27/06	JPM	6GC012706A
Toluene-ppmv	<0.27	0.27		ppmv	1.00	8021B/8015B	N/A	1/27/06	JPM	6GC012706AB
Ethylbenzene	<1.0	1.0		mg/m³	1.0	8021B/8015B	N/A	1/27/06	JPM	6GC012706A
Ethylbenzene-ppmv	<0.23	0.23		ppmv	1.00	8021B/8015B	N/A	1/27/06	JPM	6GC012706AB
Xylenes, total	<1.5	1.5		mg/m³	1.0	8021B/8015B	N/A	1/27/06	JPM	6GC012706A
Xylenes, total-ppmv	<0.35	0.35		ppmv	1.00	8021B/8015B	N/A	1/27/06	JPM	6GC012706AB
TVFHC (C6-C10)	<100	100		mg/m³	1.0	8021B/8015B	N/A	1/27/06	JPM	6GC012706A
TVFHC (C6-C10)-ppmv	<24.00	24.00		ppmv	1.00	8021B/8015B	N/A	1/27/06	JPM	6GC012706AB
Bromofluorobenzene(Surrogate)	93	70-130		%REC	1.0	8021B/8015B	N/A	1/27/06	JPM	6GC012706A

TRANSWEST GEOCHEM

Date: 20-Feb-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0601378
Project: Toole

QC SUMMARY REPORT

Method Blank

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene-ppmv	<0.16	0.16		ppmv	1	8021B/8015B	N/A	1/27/06	JPM	6GC012706AB
Toluene-ppmv	<0.27	0.27		ppmv	1	8021B/8015B	N/A	1/27/06	JPM	6GC012706AB
Ethylbenzene-ppmv	<0.23	0.23		ppmv	1	8021B/8015B	N/A	1/27/06	JPM	6GC012706AB
Xylenes, total-ppmv	<0.35	0.35		ppmv	1	8021B/8015B	N/A	1/27/06	JPM	6GC012706AB
TVFHC (C6-C10)-ppmv	<24.00	24.00		ppmv	1	8021B/8015B	N/A	1/27/06	JPM	6GC012706AB
Benzene	<0.50	0.50		mg/m³	1	8021B/8015B	N/A	1/27/06	JPM	6GC012706A
Toluene	<1.0	1.0		mg/m³	1	8021B/8015B	N/A	1/27/06	JPM	6GC012706A
Ethylbenzene	<1.0	1.0		mg/m³	1	8021B/8015B	N/A	1/27/06	JPM	6GC012706A
Xylenes, total	<1.5	1.5		mg/m³	1	8021B/8015B	N/A	1/27/06	JPM	6GC012706A
TVFHC (C6-C10)	<100	100		mg/m³	1	8021B/8015B	N/A	1/27/06	JPM	6GC012706A
Bromofluorobenzene	93	70-130		%REC	1	8021B/8015B	N/A	1/27/06	JPM	6GC012706A
Benzene	<0.50	0.50		mg/m³	1	8021B/8015B	N/A	1/28/06	BK	3GC6060128V
Toluene	<1.0	1.0		mg/m³	1	8021B/8015B	N/A	1/28/06	BK	3GC6060128V
Ethylbenzene	<1.0	1.0		mg/m³	1	8021B/8015B	N/A	1/28/06	BK	3GC6060128V
Xylenes, total	<1.5	1.5		mg/m³	1	8021B/8015B	N/A	1/28/06	BK	3GC6060128V
TVFHC (C6-C10)	<100	100		mg/m³	1	8021B/8015B	N/A	1/28/06	BK	3GC6060128V
Bromofluorobenzene	101	70-130		%REC	1	8021B/8015B	N/A	1/28/06	BK	3GC6060128V
Benzene-ppmv	<0.16	0.16		ppmv	1	8021B/8015B	N/A	1/28/06	BK	3GC6060128N
Toluene-ppmv	<0.27	0.27		ppmv	1	8021B/8015B	N/A	1/28/06	BK	3GC6060128N
Ethylbenzene-ppmv	<0.23	0.23		ppmv	1	8021B/8015B	N/A	1/28/06	BK	3GC6060128N
Xylenes, total-ppmv	<0.35	0.35		ppmv	1	8021B/8015B	N/A	1/28/06	BK	3GC6060128N
TVFHC (C6-C10)-ppmv	<24.00	24.00		ppmv	1	8021B/8015B	N/A	1/28/06	BK	3GC6060128N

TRANSWEST GEOCHEM

Date: 20-Feb-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0601378
Project: Toole

QC SUMMARY REPORT

Sample Duplicate

Analyte	Result	PQL	Units	RPD Ref Val	% RPD	RPD Limit	Test Code	Date Prepared	Date Analyzed	Analyst	Qual
Sample ID: **0601378-02AD**		Batch ID: 6GC012706A									
Client ID: **Toole-EFF-012506**											
Benzene	<0.50	0.50	mg/m³	<0.50	0%	30	8021B/8015B	N/A	1/27/06	JPM	
Toluene	<1.0	1.0	mg/m³	<1.0	0%	30	8021B/8015B	N/A	1/27/06	JPM	
Ethylbenzene	<1.0	1.0	mg/m³	<1.0	0%	30	8021B/8015B	N/A	1/27/06	JPM	
Xylenes, total	<1.5	1.5	mg/m³	<1.5	0%	30	8021B/8015B	N/A	1/27/06	JPM	
TVFHC (C6-C10)	<100	100	mg/m³	<100	0%	30	8021B/8015B	N/A	1/27/06	JPM	
Sample ID: **0601441-02AD**		Batch ID: 3GC6060128V									
Client ID:											
Benzene	20.42	1.0	mg/m³	21.55	5%	30	8021B/8015B	N/A	1/28/06	BK	
Toluene	78.87	2.0	mg/m³	79.49	1%	30	8021B/8015B	N/A	1/28/06	BK	
Ethylbenzene	15.80	2.0	mg/m³	15.74	0%	30	8021B/8015B	N/A	1/28/06	BK	
Xylenes, total	100.7	3.0	mg/m³	102.3	2%	30	8021B/8015B	N/A	1/28/06	BK	
TVFHC (C6-C10)	1792	200	mg/m³	1803	1%	30	8021B/8015B	N/A	1/28/06	BK	

TRANSWEST GEOCHEM

Date: 20-Feb-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0601378
Project: Toole

QC SUMMARY REPORT

Blank Spike

Analyte	Result	PQL	SPK value	SPK Ref Val	% Rec	Low Limit	High Limit	RPD Ref Val	% RPD	RPD Limit	Qual
Sample ID: **LCS 01/27**	Batch ID: 6GC012706A			Test Code: 8021B/8015B				Date Analyzed: 01/27/06 00:00			
				Units: mg/m³				Date Prepared: N/A			
Benzene	5.840	0.50	5.000		117%	70	130				
Toluene	4.575	1.0	5.000		92%	70	130				
Ethylbenzene	4.406	1.0	5.000		88%	70	130				
Xylenes, total	13.18	1.5	15.00		88%	70	130				
TVFHC (C6-C10)	179.1	100	250.0		72%	70	130				
Bromofluorobenzene	9.093	0.50	10.00		91%	70	130				
Sample ID: **LCS 1/28**	Batch ID: 3GC6060128V			Test Code: 8021B/8015B				Date Analyzed: 01/28/06 00:00			
				Units: mg/m³				Date Prepared: N/A			
Benzene	5.200	0.50	5.000		104%	70	130				
Toluene	5.400	1.0	5.000		108%	70	130				
Ethylbenzene	5.500	1.0	5.000		110%	70	130				
Xylenes, total	17.102	1.5	15.00		114%	70	130				
TVFHC (C6-C10)	250.0	100	250.0		100%	70	130				
Bromofluorobenzene	10.30	0.50	10.00		103%	70	130				

TRANSWEST GEOCHEM

Sample Receipt Checklist

Client Name: City of Tucson

Date and Time Received: 1/25/06 1740

Work Order Number: 0601378

Checked by: SH

Checklist completed by: Leslie May 1/26/06
Signature / Date

Logged In by: lm 1/26/06
Initials / Date

Matrix: Vapor Carrier Name: Client KQ A2 Shuttle

Reviewed by: GP 1/26/06
Initials / Date

			COMMENTS
Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☐	No ☐	Temp: Ambient Sampled < 2hrs ☐
Water – VOA vials have zero headspace?	Yes ☐	No ☐	N/A ☑
Water – pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
Water – Sulfides present in Cyanide samples?	Yes ☐	No ☐	N/A ☑

Adjusted ? _____ Checked by: _____

Client contacted: _____ Date contacted: _____ Person contacted: _____

Contacted by: _____ Regarding: _____

Corrective Action: _____

GEOCHEM

Sample Receipt Checklist

Client Name: COT-E.S.

Date and Time Received: 1/25/06 09:10

Work Order Number: 0601378

Received by: Keith Konola

Checklist completed by: Keith K. 1/25/06
Signature / Date

Logged In by: _____
Initials / Date

Matrix: Air

Carrier Name: Vendad

Reviewed by: _____
Initials / Date

			COMMENTS
Shipping container/cooler in good condition?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	N/A ☐
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	Temp: 22.0°C → Tedlar Bags
Water – VOA vials have zero headspace?	Yes ☐	No ☐	N/A ☑
Water – pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
Water – Sulfides present in Cyanide samples?	Yes ☐	No ☐	N/A ☑

Adjusted ? _____ Checked by: _____

Client contacted: _____ Date contacted: _____ Person contacted: _____

Contacted by: _____ Regarding: _____

Corrective Action: _____

TRANSWEST GEOCHEM

3725 E. Atlanta Ave., Ste 2
Phoenix, Arizona 85040
Phone: (602) 437-0330
Fax: (602) 437-0660

3860 S. Palo Verde Rd., Ste. 301
Tucson, Arizona 85714
Phone: (520) 573-1061
Fax: (520) 573-1063

Chain of Custody

TGI Work Order No: 0601378

Date 1/25/06 Page 1 of 1

Project Manager:	Molly Collins		
Client Name:	COT - ENV - SVCS		
Address:			
City, State ZIP:			
Phone:	791-5414	Fax:	- 5417

Bill to:	COT ENV SVCS		
Company:			
Address:			
City, State ZIP:			
Phone:		Fax:	

P.O. No.:	~~TT~~
Project Name:	TOOLE
Project Number:	

SAMPLE RECEIPT

Temperature:	22.0°C	Ice:	
Received Intact:	(Yes) No N/A	(Absent) / Present	
Custody Seals:	Yes (No) N/A	Wet / Blue	
Total No. of Containers:	2		

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Lab ID	No. of Containers	TPH, 8015AZR.1	BTEX (8021B)	Volatile Organics GCMS (624/8260AZ)	SDWA Volatiles, (524.2)	Semi-Volatile Organics GCMS (625/8270)	Organochlorine Pesticides (608/8081)	PCB's, (8082)	PAH, EPA 8310	8 RCRA Metals	Comments
TOOLE-IN-012506	AIR	1/25/06	0750	01	1	X	X								
TOOLE-EFF-012506	AIR	1/25/06	0755	02	1	X	X								

Relinquished by: (Signature)	(Print Name)	Received by: (Signature)	(Print Name)	Date/Time
1	GENO FOUSHEE	Keith Konola	Keith Konola	1/25/06 09:10
2 Keith Konola	Keith Konola		AZ. Shuttle	1/25/06 14:00
3	AZ Shuttle		Sjo Harden	1/25/06 17:0

White copy to TGI, Yellow copy for final report, Pink copy to sampler

Revised : 7/21/2004

TRANSWEST GEOCHEM

February 07, 2007

RECEIVED

FEB 09 2007

ENVIRONMENTAL SERVICES
100 N. STONE AVE., 2ND FLOOR

Alison Jones
City of Tucson, Environmental Services
100 N. Stone, 2nd Floor, W. Side
Tucson, AZ 85701

RE: TOOLE

Work Order No.: 0701522

Dear Alison,

Transwest Geochem, Inc. received 2 samples on 1/29/07. The results of the analyses are presented in the following report.

The Case Narrative of this report addresses any Quality Control and/or Quality Assurance issues associated with this Work Order.

If you have any questions regarding these test results, please feel free to call us at (602) 437-0330.

Sincerely,

Mardia A. Smith
Project Manager

ADHS License No. AZM133/AZ0133

3725 E. Atlanta Avenue • Phoenix, Arizona 85040 • (602) 437-0330 • (800) 927-5183 • Fax (602) 437-0660
3860 S. Palo Verde Rd. • Suite 301 • Tucson, Arizona 85714 • (520) 573-1061 • Fax (520) 573-1063

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Client: City of Tucson, Environmental Services
Work Order: 0701522
Project Name: TOOLE
Project Number:

Date Printed: 07-Feb-07

Case Narrative

All method blanks, laboratory spikes, and/or matrix spikes met quality control objectives for the parameters associated with this Work Order except as detailed below or on the Data Qualifier page of this report. Data Qualifiers used in this report are in accordance with ADEQ Arizona Data Qualifiers, Revision 2.0 11/26/2003.

Data qualifiers ("flags") contained within this analytical report have been issued to explain a quality control deficiency, and do not affect the quality (validity) of the data unless noted otherwise in the case narrative.

The vapor analysis performed by Transwest Geochem, Inc. is a non-compliance screening method based on a modified EPA method.

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License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Project Name: TOOLE
Project Number:
Work Order: 0701522
Date Received: 29-Jan-07

Case Narrative
Data Qualifiers

One or more of the following data qualifiers may be associated with your analytical and/or quality control data.

D1 Sample required dilution due to matrix.

TRANSWEST GEOCHEM

Date Printed 06-Feb-07
License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Project Name: TOOLE
Project Number:
Work Order: 0701522

Work Order Sample Summary

Client Sample ID	Lab Sample ID	Test Code	Collection Date	Date Received
TOOLE-012907-EFF	0701522-01A	8021B/8015B	1/29/07 07:00 AM	1/29/07 08:04 AM
TOOLE-012907-IN	0701522-02A	8021B/8015B	1/29/07 07:10 AM	1/29/07 08:04 AM

Date Printed 06-Feb-07

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Project Name: TOOLE
Project Number:
Work Order: 0701522
Date Received: 29-Jan-07

Definitions

Analytical Spike (AS)	The AS is a known amount of a target analyte added to a sample after it has been distilled, digested, or extracted and is ready for analysis. The AS is generally performed if the MS has failed. It is used to indicate interference that arises from sample distillation, digestion, or extraction as opposed to interference that is innate to the matrix.
Continuing Curve Verification (CCV)	The CCV is also referred to as a curve check. This is a standard analyzed at specified intervals during an analysis. The CCV verifies the stability and accuracy of the calibration curve. There are specific CCV recovery acceptance criteria for each method.
Dilution Factor (DF)	The DF is an indication of how much a sample had to be diluted in order to quantitate it on a standard curve. The DF is indicated in the reported sample result. The sample PQL increases as the dilution increases.
Internal Standard (IS)	The IS is a compound that is similar to the organic compound of interest in terms of chemical composition but is unique in that it is rare in the environment. The same concentration of IS is added to every sample for some organic methods.
Laboratory Control Sample (LCS)	The LCS is also referred to as a blank spike. The LCS is an addition of a known amount of a target analyte (from the same source as calibration standards or spikes) to an aliquot of deionized water or other appropriate clean matrix. The LCS is processed through the entire method procedure in the same manner as samples.
Matrix Spike (MS)	The MS is a known amount of a target analyte added to a sample. The MS is processed through the entire method procedure in the same manner as samples.
Method Blank (MB)	The MB is an aliquot of deionized water or other appropriate clean matrix that is thought to be free of the analyte in question. The MB is processed through the entire extraction or analysis procedure and is used to indicate contamination in the lab.
Method Detection Limit (MDL)	The MDL is the lowest level of detection of which a method is capable.
Practical Quantitation Limit (PQL)	The PQL is the lowest value at which Transwest Geochem can detect an analyte in matrix with a high degree of confidence. The PQL will increase as the DF increases. The PQL is greater than or equal to the MDL.
Relative Percent Difference (RPD)	The RPD is a measure of precision (the ability to obtain the same result on re-analysis of the same sample). It is calculated using the result of a sample, MS, LCS, or LCSV and its associated duplicate result.
Secondary Source QC Sample (LCSV)	The LCSV is also referred to as a second source laboratory control sample. It is the same type of standard as a calibration or spiking standard but is obtained from a different source. The LCSV is an indication of the primary standard quality, method performance, and instrument performance.
Surrogate	A surrogate compound is similar to the organic compound of interest in terms of chemical composition but is unique in that it is rare in the environment. When surrogates are used, they are added to every sample, blank and standard. Surrogate recovery is used as an indication of extraction and/or analytical success.
Trip Blank (TB)	The TB is a portion of deionized water preserved in the same manner as the samples. The TB travels from the lab, to the field, and then back to the lab with the samples from the field. The TB serves as an indication of contamination introduced during sample transportation.

Date Printed 06-Feb-07

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Project Name: TOOLE
Project Number:
Work Order: 0701522
Date Received: 29-Jan-07

References

Transwest Geochem, Inc. uses the methods outlined in the following references:

Code of Federal Regulations, 40CFR, Part 136, Appendix A, 1998.

Standard Methods for the Examination of Water and Wastewater, 19th Edition, 1995.

Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Revised March 1983.

Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, Revised August 1993.

Methods for the Determination of Metals in Environmental Samples, Supplement 1: EPA/600/R-94/111, Revised May 1994.

Methods for the Determination of Organic Compounds in Drinking Water, EPA/600/4-88/039, Revised July, 1991; EPA-600/4-90/020, Supplement I, July 1990; EPA-600/R-92/129; Supplement II, August 1992; EPA-600/R-95/131, Supplement III, August 1995.

Hach, Water Analysis Handbook, 3rd Edition, 1997.

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition, 1986 including Update I, July 1992; Update IIA, August 1993; Update II; September 1994; Update IIB, January 1995; Update III, December 1996

Bureau of Laboratory Services, State of Arizona Department of Health Services Method 418.1AZ: TPH in Soil, September 1994.

Bureau of Laboratory Services, State of Arizona Department of Health Services Method 8015AZ.R1, September 1998. (Comment: C6-C10 GRO reported by this method is not to be used in compliance situations)

ASTM MethodD4982, Annual Book of ASTM Standards, Volumes 11.01 and 11.02, 1995

The Determination of Polychlorinated Biphenyls in Transformer Fluid and Waste Oils, EPA-600 4-81-045, September 1982.

TRANSWEST GEOCHEM

Date Printed 06-Feb-07

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0701522
Lab ID: 0701522-01
Project Name: TOOLE
Project Number:

Client Sample ID: TOOLE-012907-EFF
Collection Date: 1/29/2007 7:00:00 AM
Matrix: Air

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene	<0.50	0.50		mg/m³	1.0	8021B/8015B	N/A	1/30/07	MO	ML02070130
Benzene-ppmv	<0.16	0.16		ppmv	1.00	8021B/8015B	N/A	1/30/07	MO	ML02070130B
Toluene	<1.0	1.0		mg/m³	1.0	8021B/8015B	N/A	1/30/07	MO	ML02070130
Toluene-ppmv	<0.27	0.27		ppmv	1.00	8021B/8015B	N/A	1/30/07	MO	ML02070130B
Ethylbenzene	<1.0	1.0		mg/m³	1.0	8021B/8015B	N/A	1/30/07	MO	ML02070130
Ethylbenzene-ppmv	<0.23	0.23		ppmv	1.00	8021B/8015B	N/A	1/30/07	MO	ML02070130B
Xylenes, total	<1.5	1.5		mg/m³	1.0	8021B/8015B	N/A	1/30/07	MO	ML02070130
Xylenes, total-ppmv	<0.35	0.35		ppmv	1.00	8021B/8015B	N/A	1/30/07	MO	ML02070130B
TVFHC (C6-C10)	<100	100		mg/m³	1.0	8021B/8015B	N/A	1/30/07	MO	ML02070130
TVFHC (C6-C10)-ppmv	<24.00	24.00		ppmv	1.00	8021B/8015B	N/A	1/30/07	MO	ML02070130B
Bromofluorobenzene(Surrogate)	95	56-140		%REC	1.0	8021B/8015B	N/A	1/30/07	MO	ML02070130

TRANSWEST GEOCHEM

Date Printed 06-Feb-07

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0701522
Lab ID: 0701522-02
Project Name: TOOLE
Project Number:

Client Sample ID: TOOLE-012907-IN
Collection Date: 1/29/2007 7:10:00 AM
Matrix: Air

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene	**2.6**	1.0	D1	mg/m³	2.0	8021B/8015B	N/A	1/30/07	MO	ML02070130
Benzene-ppmv	**0.82**	0.32	D1	ppmv	2.00	8021B/8015B	N/A	1/30/07	MO	ML02070130B
Toluene	**28**	2.0	D1	mg/m³	2.0	8021B/8015B	N/A	1/30/07	MO	ML02070130
Toluene-ppmv	**7.53**	0.54	D1	ppmv	2.00	8021B/8015B	N/A	1/30/07	MO	ML02070130B
Ethylbenzene	**11**	2.0	D1	mg/m³	2.0	8021B/8015B	N/A	1/30/07	MO	ML02070130
Ethylbenzene-ppmv	**2.47**	0.46	D1	ppmv	2.00	8021B/8015B	N/A	1/30/07	MO	ML02070130B
Xylenes, total	**42**	3.0	D1	mg/m³	2.0	8021B/8015B	N/A	1/30/07	MO	ML02070130
Xylenes, total-ppmv	**9.66**	0.70	D1	ppmv	2.00	8021B/8015B	N/A	1/30/07	MO	ML02070130B
TVFHC (C6-C10)	**1000**	200	D1	mg/m³	2.0	8021B/8015B	N/A	1/30/07	MO	ML02070130
TVFHC (C6-C10)-ppmv	**244.74**	48.00	D1	ppmv	2.00	8021B/8015B	N/A	1/30/07	MO	ML02070130B
Bromofluorobenzene(Surrogate)	92	56-140		%REC	2.0	8021B/8015B	N/A	1/30/07	MO	ML02070130

Date: 06-Feb-07

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0701522
Project: TOOLE

QC SUMMARY REPORT

Method Blank

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene-ppmv	<0.16	0.16		ppmv	1	8021B/8015B	N/A	1/30/07	MO	ML02070130B
Toluene-ppmv	<0.27	0.27		ppmv	1	8021B/8015B	N/A	1/30/07	MO	ML02070130B
Ethylbenzene-ppmv	<0.23	0.23		ppmv	1	8021B/8015B	N/A	1/30/07	MO	ML02070130B
Xylenes, total-ppmv	<0.35	0.35		ppmv	1	8021B/8015B	N/A	1/30/07	MO	ML02070130B
TVFHC (C6-C10)-ppmv	<24.00	24.00		ppmv	1	8021B/8015B	N/A	1/30/07	MO	ML02070130B
Benzene	<0.50	0.50		mg/m³	1	8021B/8015B	N/A	1/30/07	MO	ML02070130
Toluene	<1.0	1.0		mg/m³	1	8021B/8015B	N/A	1/30/07	MO	ML02070130
Ethylbenzene	<1.0	1.0		mg/m³	1	8021B/8015B	N/A	1/30/07	MO	ML02070130
Xylenes, total	<1.5	1.5		mg/m³	1	8021B/8015B	N/A	1/30/07	MO	ML02070130
TVFHC (C6-C10)	<100	100		mg/m³	1	8021B/8015B	N/A	1/30/07	MO	ML02070130
Bromofluorobenzene	100	56-140		%REC	1	8021B/8015B	N/A	1/30/07	MO	ML02070130

Date: 06-Feb-07

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0701522
Project: TOOLE

QC SUMMARY REPORT

Sample Duplicate

Analyte	Result	PQL	Units	RPD Ref Val	% RPD	RPD Limit	Test Code	Date Prepared	Date Analyzed	Analyst	Qual
Sample ID: **0701522-02AD**		Batch ID: ML02070130									
Client ID: **TOOLE-012907-IN**											
Benzene	2.923	1.0	mg/m³	<1.0	0%	30	8021B/8015B	N/A	1/30/07	MO	
Toluene	28.24	2.0	mg/m³	<2.0	0%	30	8021B/8015B	N/A	1/30/07	MO	
Ethylbenzene	10.66	2.0	mg/m³	<2.0	0%	30	8021B/8015B	N/A	1/30/07	MO	
Xylenes, total	43.243	3.0	mg/m³	<3.0	0%	30	8021B/8015B	N/A	1/30/07	MO	
TVFHC (C6-C10)	963.2	200	mg/m³	<200	0%	30	8021B/8015B	N/A	1/30/07	MO	

Date: 06-Feb-07

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0701522
Project: TOOLE

QC SUMMARY REPORT

Blank Spike

Analyte	Result	PQL	SPK value	SPK Ref Val	% Rec	Low Limit	High Limit	RPD Ref Val	% RPD	RPD Limit	Qual
Sample ID: **LCS 1/30**	Batch ID: ML02070130			Test Code: 8021B/8015B				Date Analyzed: 01/30/07 00:00			
				Units: mg/m³				Date Prepared: N/A			
Benzene	5.400	0.50	5.000		108%	70	130				
Toluene	5.200	1.0	5.000		104%	70	130				
Ethylbenzene	5.600	1.0	5.000		112%	70	130				
Xylenes, total	16.251	1.5	15.00		108%	70	130				
TVFHC (C6-C10)	222.2	100	250.0		89%	56	135				
Bromofluorobenzene	10.00	0.50	10.00		100%	56	140				

TRANSWEST GEOCHEM

Sample Receipt Checklist

Client Name: COT - ES

Date and Time Received: 1/29/07 8:04

Work Order Number: 0701522

Received by: Ralph Poulsen

Checklist completed by: Jeni Collins 1/29/07
Signature / Date

Logged In by: _____
Initials / Date

Matrix: Air

Carrier Name: Client

Reviewed by: _____
Initials / Date

				COMMENTS
Shipping container/cooler in good condition?	~~Yes ☐~~ NC	No ☐	Not Present ☒	
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☒	
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☒	
Chain of custody present?	Yes ☒	No ☐		
Chain of custody signed when relinquished and received?	Yes ☒	No ☐		
Chain of custody agrees with sample labels?	Yes ☒	No ☐		
Samples in proper container/bottle?	Yes ☒	No ☐	N/A ☐	
Sample containers intact?	Yes ☒	No ☐		
Sufficient sample volume for indicated test?	Yes ☒	No ☐		
All samples received within holding time?	Yes ☒	No ☐		
Container/Temp Blank temperature in compliance?	Yes ☒	No ☐	Temp: 19.8°C	* Air Samples
Water – VOA vials have zero headspace?	Yes ☐	No ☐	N/A ☒	
Water – pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☒	
Water – Sulfides present in Cyanide samples?	Yes ☐	No ☐	N/A ☒	

Adjusted ? _____ Checked by: _____

Client contacted: _____ Date contacted: _____ Person contacted: _____

Contacted by: _____ Regarding: _____

Corrective Action: _____

TRANSWEST GEOCHEM

3725 E. Atlanta Ave.
Phoenix, Arizona 85040
Phone: (602) 437-0330
Fax: (602) 437-0660

3860 S. Palo Verde Rd., Ste. 301
Tucson, Arizona 85714
Phone: (520) 573-1061
Fax: (520) 573-1063

Chain of Custody

TGI Work Order No: 0701522

Date 1/29/07 Page 1 of 1

Project Manager:	Molly Collins
Client Name:	COT-ES
Address:	
City, State, Zip:	
Phone:	791-5414 Fax: 791-5417

Bill To:	COT-ES
Company:	
Address:	
City, State, Zip:	
Phone:	Fax:

P.O. No.:	
Project Name:	TOOLE
Project Number:	

SAMPLE RECEIPT

Temperature:	19.8°C	Ice:	
Received Intact:	Yes No N/A	Absent Present	
Custody Seals:	Yes No N/A	Wet / Blue	
Total No. of Containers:	2	Sampled <2 hrs ago	

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Lab ID	No. of Containers	TPH, (8015AZR.1)	BTEX (8021B)	Volatile Organics GCMS (624/8260B)	SDWA Volatiles, (524.2)	Semi-Volatile Organics GCMS (625/8270)	Organochlorine Pesticides (608/8081)	PCB's, (8082)	PAH, EPA (8310)	8 RCRA Metals	Comments
TOOLE-012907.EA	AIR	1/29/07	0700	01	1	X	X								
TOOLE-012907-IN	AIR	1/29/07	0710	02	1	X	X								

Relinquished by: (Signature)	(Print Name)	Received by: (Signature)	(Print Name)	Date / Time
1	GENO FOUSHEE	Ralph V. Poulsen	Ralph V. Poulsen	1/29/07 8:04
2 Kerri Collins	Kerri Collins		Express It	1/29/07 11:00
3	Express It		Elizabeth Valtros	1.29.07 14:40

temp 2.7

White copy to TGI, Yellow copy for final report, Pink copy to sampler

Revised: 3/6/06

TRANSWEST GEOCHEM

RECEIVED

JAN 27 2006

ENVIRONMENTAL SERVICES
100 N. STONE AVE., 2ND FLOOR

January 26, 2006

Nancy Petersen
City of Tucson, Environmental Services
100 N. Stone, 2nd Floor, W. Side
Tucson, AZ 85701

RE: Toole-SVE

Work Order No.: 0601127

Dear Nancy,

Transwest Geochem, Inc. received 1 sample on 1/11/2006 8:47:00 AM for the analyses presented in the following report.

The Case Narrative of this report addresses any Quality Control and/or Quality Assurance issues associated with this Work Order.

If you have any questions regarding these test results, please feel free to call us at (602) 437-0330.

Sincerely,

Beth Proffitt
Project Manager

ADHS License No. AZM133/AZ0133

Client: City of Tucson, Environmental Services
Work Order: 0601127
Project Name: Toole-SVE
Project Number:

Date Printed: 26-Jan-06

Case Narrative

All method blanks, laboratory spikes, and sample duplicates met quality control objectives for the parameters associated with this Work Order except as detailed below or on the Data Qualifier page of this report. Data Qualifiers used in this report are in accordance with ADEQ Arizona Data Qualifiers, Revision 1.0 05/13/2002.

Data qualifiers ("flags") contained within this analytical report have been issued to explain a quality control deficiency, and do not affect the quality (validity) of the data unless noted otherwise in the case narrative.

The vapor analysis performed by Transwest Geochem, Inc. is a screening technique based on a modified EPA method. This data is not to be used in compliance situations.

3725 E. Atlanta Ave. • Suite 2 • Phoenix, Arizona 85040 • (602) 437-0330 • 1-800-927-5183 • Fax (602) 437-0660

Date Printed 26-Jan-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Project Name: Toole-SVE
Project Number:
Work Order: 0601127
Date Received: 11-Jan-06

Case Narrative
Data Qualifiers

One or more of the following data qualifiers may be associated with your analytical and/or quality control data.

D1	Sample required dilution due to matrix.
D2	Sample required dilution due to high concentration of target analyte.

TRANSWEST GEOCHEM

Date Printed 26-Jan-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Project Name: Toole-SVE
Project Number:
Work Order: 0601127
Date Received: 11-Jan-06

Work Order Sample Summary

Client Sample ID	Lab Sample ID	Test Code	Collection Date
Toole-IN	0601127-01A	8021B/8015B	1/11/2006 7:05:00 AM

Date Printed 26-Jan-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services

Project Name: Toole-SVE

Project Number:

Work Order: 0601127

Date Received: 11-Jan-06

Definitions

Analytical Spike (AS)	The AS is a known amount of a target analyte added to a sample after it has been distilled, digested, or extracted and is ready for analysis. The AS is generally performed if the MS has failed. It is used to indicate interference that arises from sample distillation, digestion, or extraction as opposed to interference that is innate to the matrix.
Continuing Curve Verification (CCV)	The CCV is also referred to as a curve check. This is a standard analyzed at specified intervals during an analysis. The CCV verifies the stability and accuracy of the calibration curve. There are specific CCV recovery acceptance criteria for each method.
Dilution Factor (DF)	The DF is an indication of how much a sample had to be diluted in order to quantitate it on a standard curve. The DF is indicated in the reported sample result. The sample PQL increases as the dilution increases.
Internal Standard (IS)	The IS is a compound that is similar to the organic compound of interest in terms of chemical composition but is unique in that it is rare in the environment. The same concentration of IS is added to every sample for some organic methods.
Laboratory Control Sample (LCS)	The LCS is also referred to as a blank spike. The LCS is an addition of a known amount of a target analyte (from the same source as calibration standards or spikes) to an aliquot of deionized water or other appropriate clean matrix. The LCS is processed through the entire method procedure in the same manner as samples.
Matrix Spike (MS)	The MS is a known amount of a target analyte added to a sample. The MS is processed through the entire method procedure in the same manner as samples.
Method Blank (MB)	The MB is an aliquot of deionized water or other appropriate clean matrix that is thought to be free of the analyte in question. The MB is processed through the entire extraction or analysis procedure and is used to indicate contamination in the lab.
Method Detection Limit (MDL)	The MDL is the lowest level of detection of which a method is capable.
Practical Quantitation Limit (PQL)	The PQL is the lowest value at which Transwest Geochem can detect an analyte in matrix with a high degree of confidence. The PQL will increase as the DF increases. The PQL is greater than or equal to the MDL.
Relative Percent Difference (RPD)	The RPD is a measure of precision (the ability to obtain the same result on re-analysis of the same sample). It is calculated using the result of a sample, MS, LCS, or LCSV and its associated duplicate result.
Secondary Source QC Sample (LCSV)	The LCSV is also referred to as a second source laboratory control sample. It is the same type of standard as a calibration or spiking standard but is obtained from a different source. The LCSV is an indication of the primary standard quality, method performance, and instrument performance.
Surrogate	A surrogate compound is similar to the organic compound of interest in terms of chemical composition but is unique in that it is rare in the environment. When surrogates are used, they are added to every sample, blank and standard. Surrogate recovery is used as an indication of extraction and/or analytical success.
Trip Blank (TB)	The TB is a portion of deionized water preserved in the same manner as the samples. The TB travels from the lab, to the field, and then back to the lab with the samples from the field. The TB serves as an indication of contamination introduced during sample transportation.

Date Printed 26-Jan-06

License No. AZM133/AZ0133

CLIENT:	City of Tucson, Environmental Services
Project Name:	Toole-SVE
Project Number:	
Work Order:	0601127
Date Received:	11-Jan-06

References

Transwest Geochem, Inc. uses the methods outlined in the following references:

Code of Federal Regulations, 40CFR, Part 136, Appendix A, 1998.

Standard Methods for the Examination of Water and Wastewater, 19th Edition, 1995.

Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Revised March 1983.

Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, Revised August 1993.

Methods for the Determination of Metals in Environmental Samples, Supplement 1: EPA/600/R-94/111, Revised May 1994.

Methods for the Determination of Organic Compounds in Drinking Water, EPA/600/4-88/039, Revised July, 1991; EPA-600/4-90/020, Supplement I, July 1990; EPA-600/R-92/129; Supplement II, August 1992; EPA-600/R-95/131, Supplement III, August 1995.

Hach, Water Analysis Handbook, 3rd Edition, 1997.

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition, 1986 including Update I, July 1992; Update IIA, August 1993; Update II; September 1994; Update IIB, January 1995; Update III, December 1996

Bureau of Laboratory Services, State of Arizona Department of Health Services Method 418.1AZ: TPH in Soil, September 1994.

Bureau of Laboratory Services, State of Arizona Department of Health Services Method 8015AZ.R1, September 1998. (Comment: C6-C10 GRO reported by this method is not to be used in compliance situations)

ASTM MethodD4982, Annual Book of ASTM Standards, Volumes 11.01 and 11.02, 1995

The Determination of Polychlorinated Biphenyls in Transformer Fluid and Waste Oils, EPA-600 4-81-045, September 1982.

TRANSWEST GEOCHEM

Date Printed 26-Jan-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0601127
Lab ID: 0601127-01
Project Name: Toole-SVE
Project Number:

Client Sample ID: Toole-IN
Collection Date: 1/11/2006 7:05:00 AM
Matrix: Air

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene	**22**	0.50		mg/m³	1.0	8021B/8015B	N/A	1/12/06	JPM	6GC860112
Benzene-ppmv	**6.77**	0.16		ppmv	1.00	8021B/8015B	N/A	1/12/06	JPM	6GC1460112B
Toluene	**61**	20	D2	mg/m³	20	8021B/8015B	N/A	1/13/06	JPM	6GC860113
Toluene-ppmv	**16.21**	5.40	D2	ppmv	20.00	8021B/8015B	N/A	1/13/06	JPM	6GC1460113B
Ethylbenzene	**38**	1.0		mg/m³	1.0	8021B/8015B	N/A	1/12/06	JPM	6GC860112
Ethylbenzene-ppmv	**8.65**	0.23		ppmv	1.00	8021B/8015B	N/A	1/12/06	JPM	6GC1460112B
Xylenes, total	**150**	30	D2	mg/m³	20	8021B/8015B	N/A	1/13/06	JPM	6GC860113
Xylenes, total-ppmv	**34.69**	7.00	D1	ppmv	20.00	8021B/8015B	N/A	1/13/06	JPM	6GC1460113B
TVFHC (C6-C10)	**2600**	2000	D2	mg/m³	20	8021B/8015B	N/A	1/13/06	JPM	6GC860113
TVFHC (C6-C10)-ppmv	**623.98**	480.00	D2	ppmv	20.00	8021B/8015B	N/A	1/13/06	JPM	6GC1460113B
Bromofluorobenzene(Surrogate)	99	61-135		%REC	20	8021B/8015B	N/A	1/13/06	JPM	6GC860113

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Date: 26-Jan-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services

Work Order: 0601127

Project: Toole-SVE

QC SUMMARY REPORT

Method Blank

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene-ppmv	<0.16	0.16		ppmv	1	8021B/8015B	N/A	1/13/06	SS	6GC1460113B
Toluene-ppmv	<0.27	0.27		ppmv	1	8021B/8015B	N/A	1/13/06	SS	6GC1460113B
Ethylbenzene-ppmv	<0.23	0.23		ppmv	1	8021B/8015B	N/A	1/13/06	SS	6GC1460113B
Xylenes, total-ppmv	<0.35	0.35		ppmv	1	8021B/8015B	N/A	1/13/06	SS	6GC1460113B
TVFHC (C6-C10)-ppmv	<24.00	24.00		ppmv	1	8021B/8015B	N/A	1/13/06	SS	6GC1460113B
trans-1,2-Dichloroethene	<1.0	1.0		mg/m³	1	8021B/8015B	N/A	1/12/06	JPM	6GC860112
Methyl tert-butyl ether	<1.5	1.5		mg/m³	1	8021B/8015B	N/A	1/12/06	JPM	6GC860112
Benzene	<0.50	0.50		mg/m³	1	8021B/8015B	N/A	1/12/06	JPM	6GC860112
Trichloroethene	<1.0	1.0		mg/m³	1	8021B/8015B	N/A	1/12/06	JPM	6GC860112
Toluene	<1.0	1.0		mg/m³	1	8021B/8015B	N/A	1/12/06	JPM	6GC860112
Tetrachloroethene	<1.0	1.0		mg/m³	1	8021B/8015B	N/A	1/12/06	JPM	6GC860112
Ethylbenzene	<1.0	1.0		mg/m³	1	8021B/8015B	N/A	1/12/06	JPM	6GC860112
Xylenes, total	<1.5	1.5		mg/m³	1	8021B/8015B	N/A	1/12/06	JPM	6GC860112
TVFHC (C6-C10)	<100	100		mg/m³	1	8021B/8015B	N/A	1/12/06	JPM	6GC860112
Bromofluorobenzene	97	61-135		%REC	1	8021B/8015B	N/A	1/12/06	JPM	6GC860112
Benzene-ppmv	<0.16	0.16		ppmv	1	8021B/8015B	N/A	1/12/06	SS	6GC1460112B
Toluene-ppmv	<0.27	0.27		ppmv	1	8021B/8015B	N/A	1/12/06	SS	6GC1460112B
Ethylbenzene-ppmv	<0.23	0.23		ppmv	1	8021B/8015B	N/A	1/12/06	SS	6GC1460112B
Xylenes, total-ppmv	<0.35	0.35		ppmv	1	8021B/8015B	N/A	1/12/06	SS	6GC1460112B
TVFHC (C6-C10)-ppmv	<24.00	24.00		ppmv	1	8021B/8015B	N/A	1/12/06	SS	6GC1460112B
trans-1,2-Dichloroethene-ppmv	<0.25	0.25		ppmv	1	8021B/8015B	N/A	1/12/06	JPM	6GC1460112B
Methyl tert-butyl ether-ppmv	<0.42	0.42		ppmv	1	8021B/8015B	N/A	1/12/06	JPM	6GC1460112B
cis-1,2-Dichloroethene-ppmv	<0.25	0.25		ppmv	1	8021B/8015B	N/A	1/12/06	JPM	6GC1460112B
Benzene-ppmv	<0.16	0.16		ppmv	1	8021B/8015B	N/A	1/12/06	JPM	6GC1460112B
Trichloroethene-ppmv	<0.19	0.19		ppmv	1	8021B/8015B	N/A	1/12/06	JPM	6GC1460112B
Toluene-ppmv	<0.27	0.27		ppmv	1	8021B/8015B	N/A	1/12/06	JPM	6GC1460112B
Tetrachloroethene-ppmv	<0.15	0.15		ppmv	1	8021B/8015B	N/A	1/12/06	JPM	6GC1460112B
Ethylbenzene-ppmv	<0.23	0.23		ppmv	1	8021B/8015B	N/A	1/12/06	JPM	6GC1460112B
Xylenes, total-ppmv	<0.35	0.35		ppmv	1	8021B/8015B	N/A	1/12/06	JPM	6GC1460112B
TVFHC (C6-C10)-ppmv	<24.00	24.00		ppmv	1	8021B/8015B	N/A	1/12/06	JPM	6GC1460112B
trans-1,2-Dichloroethene	<1.0	1.0		mg/m³	1	8021B/8015B	N/A	1/13/06	JPM	6GC860113
Methyl tert-butyl ether	<1.5	1.5		mg/m³	1	8021B/8015B	N/A	1/13/06	JPM	6GC860113
cis-1,2-Dichloroethene	<1.0	1.0		mg/m³	1	8021B/8015B	N/A	1/13/06	JPM	6GC860113
Benzene	<0.50	0.50		mg/m³	1	8021B/8015B	N/A	1/13/06	JPM	6GC860113
Trichloroethene	<1.0	1.0		mg/m³	1	8021B/8015B	N/A	1/13/06	JPM	6GC860113
Toluene	<1.0	1.0		mg/m³	1	8021B/8015B	N/A	1/13/06	JPM	6GC860113
Tetrachloroethene	<1.0	1.0		mg/m³	1	8021B/8015B	N/A	1/13/06	JPM	6GC860113
Ethylbenzene	<1.0	1.0		mg/m³	1	8021B/8015B	N/A	1/13/06	JPM	6GC860113
Xylenes, total	<1.5	1.5		mg/m³	1	8021B/8015B	N/A	1/13/06	JPM	6GC860113
TVFHC (C6-C10)	<100	100		mg/m³	1	8021B/8015B	N/A	1/13/06	JPM	6GC860113
Bromofluorobenzene	93	61-135		%REC	1	8021B/8015B	N/A	1/13/06	JPM	6GC860113

Date: 26-Jan-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0601127
Project: Toole-SVE

QC SUMMARY REPORT

Method Blank

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
trans-1,2-Dichloroethene-ppmv	<0.25	0.25		ppmv	1	8021B/8015B	N/A	1/13/06	JPM	6GC1460113B
Methyl tert-butyl ether-ppmv	<0.42	0.42		ppmv	1	8021B/8015B	N/A	1/13/06	JPM	6GC1460113B
cis-1,2-Dichloroethene-ppmv	<0.25	0.25		ppmv	1	8021B/8015B	N/A	1/13/06	JPM	6GC1460113B
Benzene-ppmv	<0.16	0.16		ppmv	1	8021B/8015B	N/A	1/13/06	JPM	6GC1460113B
Trichloroethene-ppmv	<0.19	0.19		ppmv	1	8021B/8015B	N/A	1/13/06	JPM	6GC1460113B
Toluene-ppmv	<0.27	0.27		ppmv	1	8021B/8015B	N/A	1/13/06	JPM	6GC1460113B
Tetrachloroethene-ppmv	<0.15	0.15		ppmv	1	8021B/8015B	N/A	1/13/06	JPM	6GC1460113B
Ethylbenzene-ppmv	<0.23	0.23		ppmv	1	8021B/8015B	N/A	1/13/06	JPM	6GC1460113B
Xylenes, total-ppmv	<0.35	0.35		ppmv	1	8021B/8015B	N/A	1/13/06	JPM	6GC1460113B
TVFHC (C6-C10)-ppmv	<24.00	24.00		ppmv	1	8021B/8015B	N/A	1/13/06	JPM	6GC1460113B

Date: 26-Jan-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0601127
Project: Toole-SVE

QC SUMMARY REPORT

Sample Duplicate

Analyte	Result	PQL	Units	RPD Ref Val	% RPD	RPD Limit	Test Code	Date Prepared	Date Analyzed	Analyst	Qual
Sample ID: **0601149-01AD** Batch ID: 6GC860113											
Client ID:											
trans-1,2-Dichloroethene	<1.0	1.0	mg/m³	<1.0	0%	30	8021B/8015B	N/A	1/13/06	JPM	
Methyl tert-butyl ether	<1.5	1.5	mg/m³	<1.5	0%	30	8021B/8015B	N/A	1/13/06	JPM	
Benzene	<0.50	0.50	mg/m³	<0.50	0%	30	8021B/8015B	N/A	1/13/06	JPM	
Trichloroethene	<1.0	1.0	mg/m³	<1.0	0%	30	8021B/8015B	N/A	1/13/06	JPM	
Toluene	<1.0	1.0	mg/m³	<1.0	0%	30	8021B/8015B	N/A	1/13/06	JPM	
Tetrachloroethene	<1.0	1.0	mg/m³	<1.0	0%	30	8021B/8015B	N/A	1/13/06	JPM	
Ethylbenzene	<1.0	1.0	mg/m³	<1.0	0%	30	8021B/8015B	N/A	1/13/06	JPM	
Xylenes, total	<1.5	1.5	mg/m³	<1.5	0%	30	8021B/8015B	N/A	1/13/06	JPM	
TVFHC (C6-C10)	<100	100	mg/m³	<100	0%	30	8021B/8015B	N/A	1/13/06	JPM	
Sample ID: **0601158-01AD** Batch ID: 6GC860112											
Client ID:											
trans-1,2-Dichloroethene	<1.0	1.0	mg/m³	<1.0	0%	30	8021B/8015B	N/A	1/12/06	JPM	
Methyl tert-butyl ether	<1.5	1.5	mg/m³	<1.5	0%	30	8021B/8015B	N/A	1/12/06	JPM	
Benzene	<0.50	0.50	mg/m³	<0.50	0%	30	8021B/8015B	N/A	1/12/06	JPM	
Trichloroethene	<1.0	1.0	mg/m³	<1.0	0%	30	8021B/8015B	N/A	1/12/06	JPM	
Toluene	<1.0	1.0	mg/m³	<1.0	0%	30	8021B/8015B	N/A	1/12/06	JPM	
Tetrachloroethene	<1.0	1.0	mg/m³	<1.0	0%	30	8021B/8015B	N/A	1/12/06	JPM	
Ethylbenzene	<1.0	1.0	mg/m³	<1.0	0%	30	8021B/8015B	N/A	1/12/06	JPM	
Xylenes, total	2.7118	1.5	mg/m³	2.589	5%	30	8021B/8015B	N/A	1/12/06	JPM	
TVFHC (C6-C10)	<100	100	mg/m³	<100	0%	30	8021B/8015B	N/A	1/12/06	JPM	

Date: 26-Jan-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0601127
Project: Toole-SVE

QC SUMMARY REPORT

Blank Spike

Analyte	Result	PQL	SPK value	SPK Ref Val	% Rec	Low Limit	High Limit	RPD Ref Val	% RPD	RPD Limit	Qual
Sample ID: **LCS 1/12**	Batch ID: 6GC860112			Test Code: 8021B/8015B				Date Analyzed: 01/12/06 00:00			
				Units: mg/m³				Date Prepared: N/A			
trans-1,2-Dichloroethene	4.000	1.0	5.000		80%	70	130				
Methyl tert-butyl ether	5.300	1.5	5.000		106%	70	130				
cis-1,2-Dichloroethene	4.000	1.0	5.000		80%	70	130				
Benzene	5.400	0.50	5.000		108%	70	130				
Trichloroethene	4.100	1.0	5.000		82%	70	130				
Toluene	4.200	1.0	5.000		84%	70	130				
Tetrachloroethene	4.000	1.0	5.000		80%	70	130				
Ethylbenzene	4.100	1.0	5.000		82%	70	130				
Xylenes, total	12.703	1.5	15.00		85%	70	130				
TVFHC (C6-C10)	207.4	100	250.0		83%	70	130				
Bromofluorobenzene	9.200	0.50	10.00		92%	61	135				
Sample ID: **LCS 1/13**	Batch ID: 6GC860113			Test Code: 8021B/8015B				Date Analyzed: 01/13/06 00:00			
				Units: mg/m³				Date Prepared: N/A			
trans-1,2-Dichloroethene	4.500	1.0	5.000		90%	70	130				
Methyl tert-butyl ether	6.000	1.5	5.000		120%	70	130				
cis-1,2-Dichloroethene	4.600	1.0	5.000		92%	70	130				
Benzene	6.360	0.50	5.000		127%	70	130				
Trichloroethene	4.800	1.0	5.000		96%	70	130				
Toluene	5.300	1.0	5.000		106%	70	130				
Tetrachloroethene	5.000	1.0	5.000		100%	70	130				
Ethylbenzene	5.100	1.0	5.000		102%	70	130				
Xylenes, total	15.825	1.5	15.00		106%	70	130				
TVFHC (C6-C10)	288.5	100	250.0		115%	70	130				
Bromofluorobenzene	9.200	0.50	10.00		92%	61	135				

TRANSWEST GEOCHEM

Sample Receipt Checklist

Client Name: City of Tucson

Date and Time Received: 1/11/06 0847

Work Order Number: 0601127

Checked by: lm

Checklist completed by: Leslie May 1/11/06
Signature / Date

Logged In by: SH 1/11/06
Initials / Date

Matrix: Vapor Carrier Name: Client KQ MB

Reviewed by: GP 1/12
Initials / Date

			COMMENTS
Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	Temp: Ambient Sampled < 2hrs ☐
Water – VOA vials have zero headspace?	Yes ☐	No ☐	N/A ☑
Water – pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
Water – Sulfides present in Cyanide samples?	Yes ☐	No ☐	N/A ☑

Adjusted ?_____ Checked by: _____

Client contacted: _____ Date contacted: _____ Person contacted: _____

Contacted by: _____ Regarding: _____

Corrective Action: _____

TRANSWEST GEOCHEM

Sample Receipt Checklist

Client Name: COT - Env. Svcs

Date and Time Received: 1/11/06 8:47

Work Order Number: 0601127

Received by: Richard Mosher

Checklist completed by: Kerri Collins
Signature / Date

Logged In by: _____
Initials / Date

Matrix: Air

Carrier Name: Client

Reviewed by: _____
Initials / Date

				COMMENTS
Shipping container/cooler in good condition?	Yes ☐	No ☐	Not Present ☒	
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☒	
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☒	
Chain of custody present?	Yes ☒	No ☐		
Chain of custody signed when relinquished and received?	Yes ☒	No ☐		
Chain of custody agrees with sample labels?	Yes ☒	No ☐		
Samples in proper container/bottle?	Yes ☒	No ☐	N/A ☐	
Sample containers intact?	Yes ☒	No ☐		
Sufficient sample volume for indicated test?	Yes ☒	No ☐		
All samples received within holding time?	Yes ☒	No ☐		
Container/Temp Blank temperature in compliance?	Yes ☒	No ☐	Temp: 20.6	- Tedlar Bag
Water – VOA vials have zero headspace?	Yes ☐	No ☐	N/A ☒	
Water – pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☒	
Water – Sulfides present in Cyanide samples?	Yes ☐	No ☐	N/A ☒	

Adjusted ? _____ Checked by: _____

Client contacted: _____ Date contacted: _____ Person contacted: _____

Contacted by: _____ Regarding: _____

Corrective Action: _____

TRANSWEST GEOCHEM

3725 E. Atlanta Ave., Ste 2
Phoenix, Arizona 85040
Phone: (602) 437-0330
Fax: (602) 437-0660

3860 S. Palo Verde Rd., Ste. 301
Tucson, Arizona 85714
Phone: (520) 573-1061
Fax: (520) 573-1063

Chain of Custody

TGI Work Order No: 0601127

Date 1/11/06 Page 1 of 1

Project Manager:	COT - ENVIRONMENTAL
Client Name:	Molly Collins
Address:	
City, State ZIP:	
Phone:	791-5414 Fax: -5417

Bill to:	COT - ENV
Company:	
Address:	
City, State ZIP:	
Phone:	Fax:

P.O. No.:	
Project Name:	TOOLE - SVE
Project Number:	

SAMPLE RECEIPT

Temperature:	R.T.		Ice:
Received Intact:	Yes	No	N/A	Absent / Present
Custody Seals:	Yes	No	N/A	Wet / Blue
Total No. of Containers:	1			

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Lab ID	No. of Containers	TPH, 8015AZR.1	BTEX (8021B)	Volatile Organics GCMS (624/8260AZ)	SDWA Volatiles, (524.2)	Semi-Volatile Organics GCMS (625/8270)	Organochlorine Pesticides (608/8081)	PCB's, (8082)	PAH, EPA 8310	8 RCRA Metals	Comments
TOOLE-IN	AIR	1/11 2006	0705	01	1	X	X								

Relinquished by: (Signature)	(Print Name)	Received by: (Signature)	(Print Name)	Date/Time
1	GENO FOUSHEE	R Mosher	RICHARD MOSHER	01/11/06 8:47
2 R Mosher	RICHARD MOSHER	Frank Martinez	FRANK MARTINEZ	1/11/06 14:00
3 Leslie May	Leslie May LM	Leslie May	Leslie May	1-11-06 1635

White copy to TGI, Yellow copy for final report, Pink copy to sampler

Revised : 7/21/2004

TRANSWEST GEOCHEM

Amended Report

January 24, 2007

Alison Jones
City of Tucson, Environmental Services
100 N. Stone, 2nd Floor, W. Side
Tucson, AZ 85701

RE: Toole

Work Order No.: 0612416

Dear Alison,

Transwest Geochem, Inc. received 2 samples on 12/28/06. The results of the analyses are presented in the following report.

The Case Narrative of this report addresses any Quality Control and/or Quality Assurance issues associated with this Work Order.

If you have any questions regarding these test results, please feel free to call us at (602) 437-0330.

Sincerely,

M.K. Hill

Matt Hill
Project Manager

RECEIVED
JAN 25 2007
ENVIRONMENTAL SERVICES
100 N. STONE AVE., 2ND FLOOR

ADHS License No. AZM133/AZ0133

3725 E. Atlanta Avenue • Phoenix, Arizona 85040 • (602) 437-0330 • (800) 927-5183 • Fax (602) 437-0660
3860 S. Palo Verde Rd. • Suite 301 • Tucson, Arizona 85714 • (520) 573-1061 • Fax (520) 573-1063
100% Recycled

TRANSWEST GEOCHEM

Amended Report

Client: City of Tucson, Environmental Services
Work Order: 0612416
Project Name: Toole
Project Number:

Date Printed: 24-Jan-07

Case Narrative

All method blanks, laboratory spikes, and/or matrix spikes met quality control objectives for the parameters associated with this Work Order except as detailed below or on the Data Qualifier page of this report. Data Qualifiers used in this report are in accordance with ADEQ Arizona Data Qualifiers, Revision 2.0 11/26/2003.

Data qualifiers ("flags") contained within this analytical report have been issued to explain a quality control deficiency, and do not affect the quality (validity) of the data unless noted otherwise in the case narrative.

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Amended Report

Date Printed 24-Jan-07

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Project Name: Toole
Project Number:
Work Order: 0612416
Date Received: 28-Dec-06

Case Narrative
Data Qualifiers

One or more of the following data qualifiers may be associated with your analytical and/or quality control data.

D1 Sample required dilution due to matrix.

D2 Sample required dilution due to high concentration of target analyte.

TRANSWEST GEOCHEM

Amended Report

Date Printed 24-Jan-07

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Project Name: Toole
Project Number:
Work Order: 0612416

Work Order Sample Summary

Client Sample ID	Lab Sample ID	Test Code	Collection Date	Date Received
Toole-IN-122806	0612416-01A	8021B/8015B	12/28/06 09:10 AM	12/28/06 09:52 AM
Toole-EFF-122806	0612416-02A	8021B/8015B	12/28/06 09:00 AM	12/28/06 09:52 AM

TRANSWEST GEOCHEM

Amended Report

Date Printed 24-Jan-07

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Project Name: Toole
Project Number:
Work Order: 0612416
Date Received: 28-Dec-06

Definitions

Analytical Spike (AS)	The AS is a known amount of a target analyte added to a sample after it has been distilled, digested, or extracted and is ready for analysis. The AS is generally performed if the MS has failed. It is used to indicate interference that arises from sample distillation, digestion, or extraction as opposed to interference that is innate to the matrix.
Continuing Curve Verification (CCV)	The CCV is also referred to as a curve check. This is a standard analyzed at specified intervals during an analysis. The CCV verifies the stability and accuracy of the calibration curve. There are specific CCV recovery acceptance criteria for each method.
Dilution Factor (DF)	The DF is an indication of how much a sample had to be diluted in order to quantitate it on a standard curve. The DF is indicated in the reported sample result. The sample PQL increases as the dilution increases.
Internal Standard (IS)	The IS is a compound that is similar to the organic compound of interest in terms of chemical composition but is unique in that it is rare in the environment. The same concentration of IS is added to every sample for some organic methods.
Laboratory Control Sample (LCS)	The LCS is also referred to as a blank spike. The LCS is an addition of a known amount of a target analyte (from the same source as calibration standards or spikes) to an aliquot of deionized water or other appropriate clean matrix. The LCS is processed through the entire method procedure in the same manner as samples.
Matrix Spike (MS)	The MS is a known amount of a target analyte added to a sample. The MS is processed through the entire method procedure in the same manner as samples.
Method Blank (MB)	The MB is an aliquot of deionized water or other appropriate clean matrix that is thought to be free of the analyte in question. The MB is processed through the entire extraction or analysis procedure and is used to indicate contamination in the lab.
Method Detection Limit (MDL)	The MDL is the lowest level of detection of which a method is capable.
Practical Quantitation Limit (PQL)	The PQL is the lowest value at which Transwest Geochem can detect an analyte in matrix with a high degree of confidence. The PQL will increase as the DF increases. The PQL is greater than or equal to the MDL.
Relative Percent Difference (RPD)	The RPD is a measure of precision (the ability to obtain the same result on re-analysis of the same sample). It is calculated using the result of a sample, MS, LCS, or LCSV and its associated duplicate result.
Secondary Source QC Sample (LCSV)	The LCSV is also referred to as a second source laboratory control sample. It is the same type of standard as a calibration or spiking standard but is obtained from a different source. The LCSV is an indication of the primary standard quality, method performance, and instrument performance.
Surrogate	A surrogate compound is similar to the organic compound of interest in terms of chemical composition but is unique in that it is rare in the environment. When surrogates are used, they are added to every sample, blank and standard. Surrogate recovery is used as an indication of extraction and/or analytical success.
Trip Blank (TB)	The TB is a portion of deionized water preserved in the same manner as the samples. The TB travels from the lab, to the field, and then back to the lab with the samples from the field. The TB serves as an indication of contamination introduced during sample transportation.

TRANSWEST GEOCHEM

Amended Report

Date Printed 24-Jan-07

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Project Name: Toole
Project Number:
Work Order: 0612416
Date Received: 28-Dec-06

References

Transwest Geochem, Inc. uses the methods outlined in the following references:

Code of Federal Regulations, 40CFR, Part 136, Appendix A, 1998.

Standard Methods for the Examination of Water and Wastewater, 19th Edition, 1995.

Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Revised March 1983.

Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, Revised August 1993.

Methods for the Determination of Metals in Environmental Samples, Supplement 1: EPA/600/R-94/111, Revised May 1994.

Methods for the Determination of Organic Compounds in Drinking Water, EPA/600/4-88/039, Revised July, 1991; EPA-600/4-90/020, Supplement I, July 1990; EPA-600/R-92/129; Supplement II, August 1992; EPA-600/R-95/131, Supplement III, August 1995.

Hach, Water Analysis Handbook, 3rd Edition, 1997.

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition, 1986 including Update I, July 1992; Update IIA, August 1993; Update II; September 1994; Update IIB, January 1995; Update III, December 1996

Bureau of Laboratory Services, State of Arizona Department of Health Services Method 418.1AZ: TPH in Soil, September 1994.

Bureau of Laboratory Services, State of Arizona Department of Health Services Method 8015AZ.R1, September 1998. (Comment: C6-C10 GRO reported by this method is not to be used in compliance situations)

ASTM MethodD4982, Annual Book of ASTM Standards, Volumes 11.01 and 11.02, 1995

The Determination of Polychlorinated Biphenyls in Transformer Fluid and Waste Oils, EPA-600 4-81-045, September 1982.

TRANSWEST GEOCHEM

Amended Report

Date Printed 24-Jan-07

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0612416
Lab ID: 0612416-01
Project Name: Toole
Project Number:

Client Sample ID: Toole-IN-122806
Collection Date: 12/28/2006 9:10:00 AM
Matrix: Air

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene	**5.6**	1.0	D1	mg/m³	2.0	8021B/8015B	12/27/06	12/29/06	MO	ML02061229
Benzene-ppmv	**1.76**	0.32	D1	ppmv	2.00	8021B/8015B	N/A	12/29/06	MO	ML02061229B
Toluene	**78**	2.0	D2	mg/m³	2.0	8021B/8015B	12/27/06	12/29/06	MO	ML02061229
Toluene-ppmv	**20.72**	0.54	D2	ppmv	2.00	8021B/8015B	N/A	12/29/06	MO	ML02061229B
Ethylbenzene	**17**	2.0	D1	mg/m³	2.0	8021B/8015B	12/27/06	12/29/06	MO	ML02061229
Ethylbenzene-ppmv	**3.82**	0.46	D1	ppmv	2.00	8021B/8015B	N/A	12/29/06	MO	ML02061229B
Xylenes, total	**76**	3.0	D1	mg/m³	2.0	8021B/8015B	12/27/06	12/29/06	MO	ML02061229
Xylenes, total-ppmv	**17.58**	0.70	D1	ppmv	2.00	8021B/8015B	N/A	12/29/06	MO	ML02061229B
TVFHC (C6-C10)	**940**	200	D1	mg/m³	2.0	8021B/8015B	12/27/06	12/29/06	MO	ML02061229
TVFHC (C6-C10)-ppmv	**230.47**	48.00	D1	ppmv	2.00	8021B/8015B	N/A	12/29/06	MO	ML02061229B
Bromofluorobenzene(Surrogate)	88	56-140		%REC	2.0	8021B/8015B	12/27/06	12/29/06	MO	ML02061229

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TRANSWEST GEOCHEM

Amended Report

Date Printed 24-Jan-07

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0612416
Lab ID: 0612416-02
Project Name: Toole
Project Number:

Client Sample ID: Toole-EFF-122806
Collection Date: 12/28/2006 9:00:00 AM
Matrix: Air

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene	**1.4**	0.50		mg/m³	1.0	8021B/8015B	12/27/06	12/29/06	MO	ML02061229
Benzene-ppmv	**0.44**	0.16		ppmv	1.00	8021B/8015B	N/A	12/29/06	MO	ML02061229B
Toluene	**22**	1.0		mg/m³	1.0	8021B/8015B	12/27/06	12/29/06	MO	ML02061229
Toluene-ppmv	**5.71**	0.27		ppmv	1.00	8021B/8015B	N/A	12/29/06	MO	ML02061229B
Ethylbenzene	**4.4**	1.0		mg/m³	1.0	8021B/8015B	12/27/06	12/29/06	MO	ML02061229
Ethylbenzene-ppmv	**1.01**	0.23		ppmv	1.00	8021B/8015B	N/A	12/29/06	MO	ML02061229B
Xylenes, total	**20**	1.5		mg/m³	1.0	8021B/8015B	12/27/06	12/29/06	MO	ML02061229
Xylenes, total-ppmv	**4.51**	0.35		ppmv	1.00	8021B/8015B	N/A	12/29/06	MO	ML02061229B
TVFHC (C6-C10)	**240**	100		mg/m³	1.0	8021B/8015B	12/27/06	12/29/06	MO	ML02061229
TVFHC (C6-C10)-ppmv	**59.62**	24.00		ppmv	1.00	8021B/8015B	N/A	12/29/06	MO	ML02061229B
Bromofluorobenzene(Surrogate)	88	56-140		%REC	1.0	8021B/8015B	12/27/06	12/29/06	MO	ML02061229

TRANSWEST GEOCHEM

Amended Report

Date: 24-Jan-07

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0612416
Project: Toole

QC SUMMARY REPORT

Method Blank

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene-ppmv	<0.16	0.16		ppmv	1	8021B/8015B	N/A	12/29/06	MO	ML02061229B
Toluene-ppmv	<0.27	0.27		ppmv	1	8021B/8015B	N/A	12/29/06	MO	ML02061229B
Ethylbenzene-ppmv	<0.23	0.23		ppmv	1	8021B/8015B	N/A	12/29/06	MO	ML02061229B
Xylenes, total-ppmv	<0.35	0.35		ppmv	1	8021B/8015B	N/A	12/29/06	MO	ML02061229B
TVFHC (C6-C10)-ppmv	<24.00	24.00		ppmv	1	8021B/8015B	N/A	12/29/06	MO	ML02061229B
Benzene	<0.50	0.50		mg/m³	1	8021B/8015B	12/27/06	12/29/06	MO	ML02061229
Toluene	<1.0	1.0		mg/m³	1	8021B/8015B	12/27/06	12/29/06	MO	ML02061229
Ethylbenzene	<1.0	1.0		mg/m³	1	8021B/8015B	12/27/06	12/29/06	MO	ML02061229
Xylenes, total	<1.5	1.5		mg/m³	1	8021B/8015B	12/27/06	12/29/06	MO	ML02061229
TVFHC (C6-C10)	<100	100		mg/m³	1	8021B/8015B	12/27/06	12/29/06	MO	ML02061229
Bromofluorobenzene	97	56-140		%REC	1	8021B/8015B	12/27/06	12/29/06	MO	ML02061229

TRANSWEST GEOCHEM

Amended Report

Date: 24-Jan-07

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0612416
Project: Toole

QC SUMMARY REPORT

Sample Duplicate

Analyte	Result	PQL	Units	RPD Ref Val	% RPD	RPD Limit	Test Code	Date Prepared	Date Analyzed	Analyst	Qual
Sample ID: **0612402-03AD**		Batch ID:	ML02061229								
Client ID:											
Benzene	19.68	1.0	mg/m³	18.00	9%	30	8021B/8015B	12/27/06	12/29/06	MO	
Toluene	55.20	2.0	mg/m³	55.40	0%	30	8021B/8015B	12/27/06	12/29/06	MO	
Ethylbenzene	7.367	2.0	mg/m³	7.128	3%	30	8021B/8015B	12/27/06	12/29/06	MO	
Xylenes, total	44.57	3.0	mg/m³	43.82	2%	30	8021B/8015B	12/27/06	12/29/06	MO	
TVFHC (C6-C10)	629.4	200	mg/m³	628.5	0%	30	8021B/8015B	12/27/06	12/29/06	MO	

TRANSWEST GEOCHEM

Amended Report

Date: 24-Jan-07

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0612416
Project: Toole

QC SUMMARY REPORT

Blank Spike

Analyte	Result	PQL	SPK value	SPK Ref Val	% Rec	Low Limit	High Limit	RPD Ref Val	% RPD	RPD Limit	Qual
Sample ID: **LCS 12/29**	Batch ID: ML02061229			Test Code: 8021B/8015B				Date Analyzed: 12/29/06 00:00			
				Units mg/m³				Date Prepared: 12/27/06			
Benzene	5.200	0.50	5.000		104%	70	130				
Toluene	5.100	1.0	5.000		102%	70	130				
Ethylbenzene	5.200	1.0	5.000		104%	70	130				
Xylenes, total	15.235	1.5	15.00		102%	70	130				
TVFHC (C6-C10)	234.2	100	250.0		94%	56	135				
Bromofluorobenzene	10.00	0.50	10.00		100%	56	140				

TRANSWEST GEOCHEM

3725 E. Atlanta Ave.
Phoenix, Arizona 85040
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Tucson, Arizona 85714
Phone: (520) 573-1061
Fax: (520) 573-1063

Chain of Custody

TGI Work Order No: 0612416

Date 12/28/06 Page 1 of 1

Project Manager:	Molly Collins
Client Name:	COT-ENV SVCS
Address:	
City, State, Zip:	
Phone:	791-5414 Fax: -5417

Bill To:	COT-ENV SVCS
Company:	
Address:	
City, State, Zip:	
Phone:	Fax:

P.O. No.	
Project Name:	Toole
Project Number:	

SAMPLE RECEIPT

Temperature:	Amb	Ice:	
Received Intact:	Yes / No / N/A	Absent / Present	
Custody Seals:	Yes / No / N/A	Wet / Blue	
Total No. of Containers:	2	Sampled <2 hrs ago	

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled 2006	Time Sampled	Lab ID	No. of Containers	TPH, (8015AZR.1)	BTEX (8021B)	Volatile Organics GCMS (624/8260B)	SDWA Volatiles, (524.2)	Semi-Volatile Organics GCMS (625/8270)	Organochlorine Pesticides (608/8081)	PCB's, (8082)	PAH, EPA (8310)	8 RCRA Metals	Comments
Toole-IN-122806	AIR	12/28	0910	01	1	X									
Toole-EFF-122806	AIR	12/28	0900	02	1	X									

Relinquished by: (Signature)	(Print Name)	Received by: (Signature)	(Print Name)	Date / Time
1	~~GENOFOUSHEE~~	RMosher	RMOSHER	12/28/06 09:50
2 Kerri Collins	Kerri Collins		Express It	12/28/06 11:00
3	Express It		Sigo Harden	12/28/06 1445

White copy to TGI, Yellow copy for final report, Pink copy to sampler

Revised: 3/6/06

TRANSWEST GEOCHEM

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Phoenix, Arizona 85040
Phone: (602) 437-0330
Fax: (602) 437-0660

3860 S. Palo Verde Rd., Ste. 301
Tucson, Arizona 85714
Phone: (520) 573-1061
Fax: (520) 573-1063

Chain of Custody

TGI Work Order No: 0612416

Date 12/28/06 Page 1 of 1

Project Manager:	Molly Collins
Client Name:	COT-ENV SVCS
Address:	
City, State, Zip:	
Phone:	791-5414 Fax: -5417

Bill To:	COT-ENV SVCS
Company:	
Address:	
City, State, Zip:	
Phone:	Fax:

P.O. No.:	
Project Name:	Toole
Project Number:	

SAMPLE RECEIPT

Temperature:	Amb	Ice:	
Received Intact:	Yes No N/A	Absent / Present	
Custody Seals:	Yes No N/A	Wet / Blue	
Total No. of Containers:	2	Sampled <2 hrs ago	

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Lab ID	No. of Containers	TPH, (8015AZR.1)	BTEX (8021B)	Volatile Organics GCMS (624/8260B)	SDWA Volatiles, (524.2)	Semi-Volatile Organics GCMS (625/8270)	Organochlorine Pesticides (608/8081)	PCB's, (8082)	PAH, EPA (8310)	8 RCRA Metals	Comments
Toole-IN-122806	AIR	12/28	0910	01	1	X									
Toole-EFF-122806	AIR	12/28	0900	02	1	X									

Relinquished by: (Signature)	(Print Name)	Received by: (Signature)	(Print Name)	Date / Time
1 [signature]	GENO FONSHEE	R Mosher	R MOSHER	12/28/06 09:52
2 Kerri Collins	Kerri Collins		Express It	12/28/06 11:00
3	Express It	[signature]	Sgo Harden	12/28/06 1445

White copy to TGI, Yellow copy for final report, Pink copy to sampler

Revised: 3/6/06

TRANSWEST GEOCHEM

January 17, 2006

Nancy Petersen
City of Tucson, Environmental Services
100 N. Stone, 2nd Floor, W. Side
Tucson, AZ 85701

RECEIVED
JAN 19 2006
ENVIRONMENTAL SERVICES
100 N. STONE AVE., 2ND FLOOR

RE: Toole Ave
Work Order No.: 0512406

Dear Nancy,

Transwest Geochem, Inc. received 1 sample on 12/29/2005 10:05:00 AM for the analyses presented in the following report.

The Case Narrative of this report addresses any Quality Control and/or Quality Assurance issues associated with this Work Order.

If you have any questions regarding these test results, please feel free to call us at (602) 437-0330.

Sincerely,

Carlene McCutchen

for Beth Proffitt
Project Manager

ADHS License No. AZM133/AZ0133

3725 E. Atlanta Ave. • Suite 2 • Phoenix, Arizona 85040 • (602) 437-0330 • 1-800-927-5183 • Fax (602) 437-0660
3860 S. Palo Verde Rd. • Suite 301 • Tucson, Arizona 85714 • (520) 573-1061 • Fax (520) 573-1063

Date Printed: 17-Jan-06

Client: City of Tucson, Environmental Services
Work Order: 0512406
Project Name: Toole Ave
Project Number:

Case Narrative

All method blanks, laboratory spikes, and/or matrix spikes met quality control objectives for the parameters associated with this Work Order except as detailed below or on the Data Qualifier page of this report. Data Qualifiers used in this report are in accordance with ADEQ Arizona Data Qualifiers, Revision 2.0 11/26/2003.

Data qualifiers ("flags") contained within this analytical report have been issued to explain a quality control deficiency, and do not affect the quality (validity) of the data unless noted otherwise in the case narrative.

The vapor analysis performed by Transwest Geochem, Inc. is a non-compliance screening method based on a modified EPA method.

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TRANSWEST GEOCHEM

Date Printed 17-Jan-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Project Name: Toole Ave
Project Number:
Work Order: 0512406
Date Received: 29-Dec-05

Case Narrative
Data Qualifiers

One or more of the following data qualifiers may be associated with your analytical and/or quality control data.

D1	Sample required dilution due to matrix.
D2	Sample required dilution due to high concentration of target analyte.

TRANSWEST GEOCHEM

Date Printed 17-Jan-06
License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Project Name: Toole Ave
Project Number:
Work Order: 0512406
Date Received: 29-Dec-05

Work Order Sample Summary

Client Sample ID	Lab Sample ID	Test Code	Collection Date
Toole-IN	0512406-01A	8021B/8015B	12/29/2005 9:42:00 AM

TRANSWEST GEOCHEM

Date Printed 17-Jan-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Project Name: Toole Ave
Project Number:
Work Order: 0512406
Date Received: 29-Dec-05

Definitions

Analytical Spike (AS)	The AS is a known amount of a target analyte added to a sample after it has been distilled, digested, or extracted and is ready for analysis. The AS is generally performed if the MS has failed. It is used to indicate interference that arises from sample distillation, digestion, or extraction as opposed to interference that is innate to the matrix.
Continuing Curve Verification (CCV)	The CCV is also referred to as a curve check. This is a standard analyzed at specified intervals during an analysis. The CCV verifies the stability and accuracy of the calibration curve. There are specific CCV recovery acceptance criteria for each method.
Dilution Factor (DF)	The DF is an indication of how much a sample had to be diluted in order to quantitate it on a standard curve. The DF is indicated in the reported sample result. The sample PQL increases as the dilution increases.
Internal Standard (IS)	The IS is a compound that is similar to the organic compound of interest in terms of chemical composition but is unique in that it is rare in the environment. The same concentration of IS is added to every sample for some organic methods.
Laboratory Control Sample (LCS)	The LCS is also referred to as a blank spike. The LCS is an addition of a known amount of a target analyte (from the same source as calibration standards or spikes) to an aliquot of deionized water or other appropriate clean matrix. The LCS is processed through the entire method procedure in the same manner as samples.
Matrix Spike (MS)	The MS is a known amount of a target analyte added to a sample. The MS is processed through the entire method procedure in the same manner as samples.
Method Blank (MB)	The MB is an aliquot of deionized water or other appropriate clean matrix that is thought to be free of the analyte in question. The MB is processed through the entire extraction or analysis procedure and is used to indicate contamination in the lab.
Method Detection Limit (MDL)	The MDL is the lowest level of detection of which a method is capable.
Practical Quantitation Limit (PQL)	The PQL is the lowest value at which Transwest Geochem can detect an analyte in matrix with a high degree of confidence. The PQL will increase as the DF increases. The PQL is greater than or equal to the MDL.
Relative Percent Difference (RPD)	The RPD is a measure of precision (the ability to obtain the same result on re-analysis of the same sample). It is calculated using the result of a sample, MS, LCS, or LCSV and its associated duplicate result.
Secondary Source QC Sample (LCSV)	The LCSV is also referred to as a second source laboratory control sample. It is the same type of standard as a calibration or spiking standard but is obtained from a different source. The LCSV is an indication of the primary standard quality, method performance, and instrument performance.
Surrogate	A surrogate compound is similar to the organic compound of interest in terms of chemical composition but is unique in that it is rare in the environment. When surrogates are used, they are added to every sample, blank and standard. Surrogate recovery is used as an indication of extraction and/or analytical success.
Trip Blank (TB)	The TB is a portion of deionized water preserved in the same manner as the samples. The TB travels from the lab, to the field, and then back to the lab with the samples from the field. The TB serves as an indication of contamination introduced during sample transportation.

TRANSWEST GEOCHEM

Date Printed 17-Jan-06
License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Project Name: Toole Ave
Project Number:
Work Order: 0512406
Date Received: 29-Dec-05

References

Transwest Geochem, Inc. uses the methods outlined in the following references:

Code of Federal Regulations, 40CFR, Part 136, Appendix A, 1998.

Standard Methods for the Examination of Water and Wastewater, 19th Edition, 1995.

Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Revised March 1983.

Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, Revised August 1993.

Methods for the Determination of Metals in Environmental Samples, Supplement 1: EPA/600/R-94/111, Revised May 1994.

Methods for the Determination of Organic Compounds in Drinking Water, EPA/600/4-88/039, Revised July, 1991; EPA-600/4-90/020, Supplement I, July 1990; EPA-600/R-92/129; Supplement II, August 1992; EPA-600/R-95/131, Supplement III, August 1995.

Hach, Water Analysis Handbook, 3rd Edition, 1997.

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition, 1986 including Update I, July 1992; Update IIA, August 1993; Update II; September 1994; Update IIB, January 1995; Update III, December 1996

Bureau of Laboratory Services, State of Arizona Department of Health Services Method 418.1AZ: TPH in Soil, September 1994.

Bureau of Laboratory Services, State of Arizona Department of Health Services Method 8015AZ.R1, September 1998. (Comment: C6-C10 GRO reported by this method is not to be used in compliance situations)

ASTM MethodD4982, Annual Book of ASTM Standards, Volumes 11.01 and 11.02, 1995

The Determination of Polychlorinated Biphenyls in Transformer Fluid and Waste Oils, EPA-600 4-81-045, September 1982.

TRANSWEST GEOCHEM

Date Printed 17-Jan-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0512406
Lab ID: 0512406-01
Project Name: Toole Ave
Project Number:

Client Sample ID: Toole-IN
Collection Date: 12/29/2005 9:42:00 AM
Matrix: Air

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene	**15**	2.5	D1	mg/m³	5.0	8021B/8015B	N/A	12/30/05	MO	ML2051230
Benzene-ppmv	**4.76**	0.80	D1	ppmv	5.00	8021B/8015B	N/A	12/30/05	MO	ML2051230B
Toluene	**91**	5.0	D2	mg/m³	5.0	8021B/8015B	N/A	12/30/05	MO	ML2051230
Toluene-ppmv	**24.08**	1.35	D2	ppmv	5.00	8021B/8015B	N/A	12/30/05	MO	ML2051230B
Ethylbenzene	**32**	5.0	D1	mg/m³	5.0	8021B/8015B	N/A	12/30/05	MO	ML2051230
Ethylbenzene-ppmv	**7.49**	1.15	D1	ppmv	5.00	8021B/8015B	N/A	12/30/05	MO	ML2051230B
Xylenes, total	**130**	7.5	D1	mg/m³	5.0	8021B/8015B	N/A	12/30/05	MO	ML2051230
Xylenes, total-ppmv	**28.88**	1.75	D1	ppmv	5.00	8021B/8015B	N/A	12/30/05	MO	ML2051230B
TVFHC (C6-C10)	**3000**	500	D2	mg/m³	5.0	8021B/8015B	N/A	12/30/05	MO	ML2051230
TVFHC (C6-C10)-ppmv	**722.93**	120.00	D2	ppmv	5.00	8021B/8015B	N/A	12/30/05	MO	ML2051230B
Bromofluorobenzene(Surrogate)	93	61-135		%REC	5.0	8021B/8015B	N/A	12/30/05	MO	ML2051230

Confidential and Privileged

Date: 17-Jan-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0512406
Project: Toole Ave

QC SUMMARY REPORT

Method Blank

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene-ppmv	<0.16	0.16		ppmv	1	8021B/8015B	N/A	12/30/05	MO	ML2051230B
Toluene-ppmv	<0.27	0.27		ppmv	1	8021B/8015B	N/A	12/30/05	MO	ML2051230B
Ethylbenzene-ppmv	<0.23	0.23		ppmv	1	8021B/8015B	N/A	12/30/05	MO	ML2051230B
Xylenes, total-ppmv	<0.35	0.35		ppmv	1	8021B/8015B	N/A	12/30/05	MO	ML2051230B
TVFHC (C6-C10)-ppmv	<24.00	24.00		ppmv	1	8021B/8015B	N/A	12/30/05	MO	ML2051230B
Benzene	<0.50	0.50		mg/m³	1	8021B/8015B	N/A	12/30/05	MO	ML2051230
Toluene	<1.0	1.0		mg/m³	1	8021B/8015B	N/A	12/30/05	MO	ML2051230
Ethylbenzene	<1.0	1.0		mg/m³	1	8021B/8015B	N/A	12/30/05	MO	ML2051230
Xylenes, total	<1.5	1.5		mg/m³	1	8021B/8015B	N/A	12/30/05	MO	ML2051230
TVFHC (C6-C10)	<100	100		mg/m³	1	8021B/8015B	N/A	12/30/05	MO	ML2051230
Bromofluorobenzene	93	61-135		%REC	1	8021B/8015B	N/A	12/30/05	MO	ML2051230

TRANSWEST GEOCHEM

Date: 17-Jan-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0512406
Project: Toole Ave

QC SUMMARY REPORT

Sample Duplicate

Analyte	Result	PQL	Units	RPD Ref Val	% RPD	RPD Limit	Test Code	Date Prepared	Date Analyzed	Analyst	Qual
Sample ID: **0512406-01AD**		Batch ID: ML2051230									
Client ID: **Toole-IN**											
Benzene	16.35	2.5	mg/m³	15.18	7%	30	8021B/8015B	N/A	12/30/05	MO	
Toluene	90.36	5.0	mg/m³	90.59	0%	30	8021B/8015B	N/A	12/30/05	MO	
Ethylbenzene	32.51	5.0	mg/m³	32.49	0%	30	8021B/8015B	N/A	12/30/05	MO	
Xylenes, total	125.23	7.5	mg/m³	125.2	0%	30	8021B/8015B	N/A	12/30/05	MO	
TVFHC (C6-C10)	2899	500	mg/m³	2957	2%	30	8021B/8015B	N/A	12/30/05	MO	

TRANSWEST GEOCHEM

Date: 17-Jan-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0512406
Project: Toole Ave

QC SUMMARY REPORT

Blank Spike

Analyte	Result	PQL	SPK value	SPK Ref Val	% Rec	Low Limit	High Limit	RPD Ref Val	% RPD	RPD Limit	Qual
Sample ID: **LCS 12/30/05**	Batch ID: ML2051230			Test Code: 8021B/8015B				Date Analyzed: 12/30/05 00:00			
				Units mg/m³				Date Prepared: N/A			
Benzene	5.600	0.50	5.000		112%	70	130				
Toluene	5.600	1.0	5.000		112%	70	130				
Ethylbenzene	5.100	1.0	5.000		102%	70	130				
Xylenes, total	15.483	1.5	15.00		103%	70	130				
TVFHC (C6-C10)	241.2	100	250.0		96%	70	130				
Bromofluorobenzene	9.900	0.50	10.00		99%	61	135				

TRANSWEST GEOCHEM

Sample Receipt Checklist

Client Name: City of Tucson ES

Date and Time Received: 12/30/05 0920

Work Order Number: 05/2406

Checked by: lm

Checklist completed by: Leslie May 12/30/05
Signature / Date

Logged In by: lm 12/30/05
Initials / Date

Matrix: Vapor Carrier Name: Client KQ Express It

Reviewed by: CM 1/4/06
Initials / Date

			COMMENTS
Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☐	No ☐	Temp: Ambient Sampled < 2hrs ☐
Water – VOA vials have zero headspace?	Yes ☐	No ☐	N/A ☑
Water – pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
Water – Sulfides present in Cyanide samples?	Yes ☐	No ☐	N/A ☑

Adjusted ?_____ Checked by: _____

Client contacted: _____ Date contacted: _____ Person contacted: _____

Contacted by: _____ Regarding: _____

Corrective Action: _____

TRANSWEST GEOCHEM

Sample Receipt Checklist

Client Name: City of Tucson - E.S.

Date and Time Received: 12/29/05 10:05

Work Order Number: 0512406

Received by: Keith Konola

Checklist completed by: Keith K. 12/29/05
Signature / Date

Logged In by: _____
Initials / Date

Matrix: Air

Carrier Name: Yerdad

Reviewed by: _____
Initials / Date

			COMMENTS
Shipping container/cooler in good condition?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	N/A ☐
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	Temp: 20.8°C → Tedlar Bag.
Water – VOA vials have zero headspace?	Yes ☐	No ☐	N/A ☑
Water – pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
Water – Sulfides present in Cyanide samples?	Yes ☐	No ☐	N/A ☑

Adjusted ? _____ Checked by: _____

Client contacted: _____ Date contacted: _____ Person contacted: _____

Contacted by: _____ Regarding: _____

Corrective Action: _____

Chain of Custody

TRANSWEST GEOCHEM

3725 E. Atlanta Ave., Ste 2
Phoenix, Arizona 85040
Phone: (602) 437-0330
Fax: (602) 437-0660

3860 S. Palo Verde Rd., Ste. 301
Tucson, Arizona 85714
Phone: (520) 573-1061
Fax: (520) 573-1063

TGI Work Order No: 0512406
Date 12/29 Page 1 of 1

Project Manager:	Molly Collins
Client Name:	City of Tucson ES
Address:	
City, State ZIP:	
Phone:	Fax:

Bill to:	City of Tucson ES
Company:	
Address:	
City, State ZIP:	
Phone:	Fax:

P.O. No.:	
Project Name:	Toole Ave
Project Number:	

SAMPLE RECEIPT

Temperature:	20.8°C	Ice:	
Received Intact:	Yes (Yes circled) No	N/A	Absent (Absent circled) Present
Custody Seals:	Yes No (No circled)	N/A	Wet / Blue
Total No. of Containers:	1		

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Lab ID	No. of Containers	TPH, 8015AZR.1	BTEX (8021B)	Volatile Organics GCMS (624/8260AZ)	SDWA Volatiles, (524.2)	Semi-Volatile Organics GCMS (625/8270)	Organochlorine Pesticides (608/8081)	PCB's, (8082)	PAH, EPA 8310	8 RCRA Metals	Comments
Toole-IN	VA	2005 12/29	0942	01	1	X	X								

Relinquished by: (Signature)	(Print Name)	Received by: (Signature)	(Print Name)	Date/Time
1 Matt Wallace	MATT WALLACE	Keith Kanoka	Keith Kanoka	12/29/05 10:05
2 Keith Kanoka	Keith Kanoka		Express It	12/29/05 15:00
3	Express It	Leslie May - TGI	Leslie May	12-30-05 0920

Revised: 7/21/2004

TRANSWEST GEOCHEM

January 17, 2006

Nancy Petersen
City of Tucson, Environmental Services
100 N. Stone, 2nd Floor, W. Side
Tucson, AZ 85701

RE: Toole Ave

Work Order No.: 0512243

Dear Nancy,

Transwest Geochem, Inc. received 3 samples on 12/15/2005 9:30:00 AM for the analyses presented in the following report.

The Case Narrative of this report addresses any Quality Control and/or Quality Assurance issues associated with this Work Order.

If you have any questions regarding these test results, please feel free to call us at (602) 437-0330.

Sincerely,

Carlene McCutchen

for Beth Proffitt
Project Manager

ADHS License No. AZM133/AZ0133

3725 E. Atlanta Ave. • Suite 2 • Phoenix, Arizona 85040 • (602) 437-0330 • 1-800-927-5183 • Fax (602) 437-0660
3860 S. Palo Verde Rd. • Suite 301 • Tucson, Arizona 85714 • (520) 573-1061 • Fax (520) 573-1063

TRANSWEST GEOCHEM

Client: City of Tucson, Environmental Services
Work Order: 0512243
Project Name: Toole Ave
Project Number:

Date Printed: 17-Jan-06

Case Narrative

All method blanks, laboratory spikes, and/or matrix spikes met quality control objectives for the parameters associated with this Work Order except as detailed below or on the Data Qualifier page of this report. Data Qualifiers used in this report are in accordance with ADEQ Arizona Data Qualifiers, Revision 2.0 11/26/2003.

Data qualifiers ("flags") contained within this analytical report have been issued to explain a quality control deficiency, and do not affect the quality (validity) of the data unless noted otherwise in the case narrative.

The vapor analysis performed by Transwest Geochem, Inc. is a non-compliance screening method based on a modified EPA method.

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TRANSWEST GEOCHEM

Date Printed 17-Jan-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Project Name: Toole Ave
Project Number:
Work Order: 0512243
Date Received: 15-Dec-05

Case Narrative
Data Qualifiers

One or more of the following data qualifiers may be associated with your analytical and/or quality control data.

D1 Sample required dilution due to matrix.

D2 Sample required dilution due to high concentration of target analyte.

TRANSWEST GEOCHEM

Date Printed 17-Jan-06
License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Project Name: Toole Ave
Project Number:
Work Order: 0512243
Date Received: 15-Dec-05

Work Order Sample Summary

Client Sample ID	Lab Sample ID	Test Code	Collection Date
Toole-Influent	0512243-01A	8021B/8015B	12/15/2005 8:50:00 AM
Toole-Post Dilution	0512243-02A	8021B/8015B	12/15/2005 8:55:00 AM
Toole-Effluent	0512243-03A	8021B/8015B	12/15/2005 9:00:00 AM

TRANSWEST GEOCHEM

Date Printed 17-Jan-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Project Name: Toole Ave
Project Number:
Work Order: 0512243
Date Received: 15-Dec-05

Definitions

Analytical Spike (AS)	The AS is a known amount of a target analyte added to a sample after it has been distilled, digested, or extracted and is ready for analysis. The AS is generally performed if the MS has failed. It is used to indicate interference that arises from sample distillation, digestion, or extraction as opposed to interference that is innate to the matrix.
Continuing Curve Verification (CCV)	The CCV is also referred to as a curve check. This is a standard analyzed at specified intervals during an analysis. The CCV verifies the stability and accuracy of the calibration curve. There are specific CCV recovery acceptance criteria for each method.
Dilution Factor (DF)	The DF is an indication of how much a sample had to be diluted in order to quantitate it on a standard curve. The DF is indicated in the reported sample result. The sample PQL increases as the dilution increases.
Internal Standard (IS)	The IS is a compound that is similar to the organic compound of interest in terms of chemical composition but is unique in that it is rare in the environment. The same concentration of IS is added to every sample for some organic methods.
Laboratory Control Sample (LCS)	The LCS is also referred to as a blank spike. The LCS is an addition of a known amount of a target analyte (from the same source as calibration standards or spikes) to an aliquot of deionized water or other appropriate clean matrix. The LCS is processed through the entire method procedure in the same manner as samples.
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Practical Quantitation Limit (PQL)	The PQL is the lowest value at which Transwest Geochem can detect an analyte in matrix with a high degree of confidence. The PQL will increase as the DF increases. The PQL is greater than or equal to the MDL.
Relative Percent Difference (RPD)	The RPD is a measure of precision (the ability to obtain the same result on re-analysis of the same sample). It is calculated using the result of a sample, MS, LCS, or LCSV and its associated duplicate result.
Secondary Source QC Sample (LCSV)	The LCSV is also referred to as a second source laboratory control sample. It is the same type of standard as a calibration or spiking standard but is obtained from a different source. The LCSV is an indication of the primary standard quality, method performance, and instrument performance.
Surrogate	A surrogate compound is similar to the organic compound of interest in terms of chemical composition but is unique in that it is rare in the environment. When surrogates are used, they are added to every sample, blank and standard. Surrogate recovery is used as an indication of extraction and/or analytical success.
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TRANSWEST GEOCHEM

Date Printed 17-Jan-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Project Name: Toole Ave
Project Number:
Work Order: 0512243
Date Received: 15-Dec-05

References

Transwest Geochem, Inc. uses the methods outlined in the following references:

Code of Federal Regulations, 40CFR, Part 136, Appendix A, 1998.

Standard Methods for the Examination of Water and Wastewater, 19th Edition, 1995.

Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Revised March 1983.

Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, Revised August 1993.

Methods for the Determination of Metals in Environmental Samples, Supplement 1: EPA/600/R-94/111, Revised May 1994.

Methods for the Determination of Organic Compounds in Drinking Water, EPA/600/4-88/039, Revised July, 1991; EPA-600/4-90/020, Supplement I, July 1990; EPA-600/R-92/129; Supplement II, August 1992; EPA-600/R-95/131, Supplement III, August 1995.

Hach, Water Analysis Handbook, 3rd Edition, 1997.

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition, 1986 including Update I, July 1992; Update IIA, August 1993; Update II; September 1994; Update IIB, January 1995; Update III, December 1996

Bureau of Laboratory Services, State of Arizona Department of Health Services Method 418.1AZ: TPH in Soil, September 1994.

Bureau of Laboratory Services, State of Arizona Department of Health Services Method 8015AZ.R1, September 1998. (Comment: C6-C10 GRO reported by this method is not to be used in compliance situations)

ASTM MethodD4982, Annual Book of ASTM Standards, Volumes 11.01 and 11.02, 1995

The Determination of Polychlorinated Biphenyls in Transformer Fluid and Waste Oils, EPA-600 4-81-045, September 1982.

TRANSWEST GEOCHEM

Date Printed 17-Jan-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0512243
Lab ID: 0512243-01
Project Name: Toole Ave
Project Number:

Client Sample ID: Toole-Influent
Collection Date: 12/15/2005 8:50:00 AM
Matrix: Soil Vapor

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene	**21**	2.5	D1	mg/m³	5.0	8021B/8015B	N/A	12/16/05	MO	ML2051215
Benzene-ppmv	**6.61**	0.80	D1	ppmv	5.00	8021B/8015B	N/A	12/16/05	MO	ML2051215B
Toluene	**100**	5.0	D2	mg/m³	5.0	8021B/8015B	N/A	12/16/05	MO	ML2051215
Toluene-ppmv	**26.89**	1.35	D2	ppmv	5.00	8021B/8015B	N/A	12/16/05	MO	ML2051215B
Ethylbenzene	**34**	5.0	D1	mg/m³	5.0	8021B/8015B	N/A	12/16/05	MO	ML2051215
Ethylbenzene-ppmv	**7.80**	1.15	D1	ppmv	5.00	8021B/8015B	N/A	12/16/05	MO	ML2051215B
Xylenes, total	**120**	7.5	D1	mg/m³	5.0	8021B/8015B	N/A	12/16/05	MO	ML2051215
Xylenes, total-ppmv	**28.76**	1.75	D1	ppmv	5.00	8021B/8015B	N/A	12/16/05	MO	ML2051215B
TVFHC (C6-C10)	**3600**	500	D2	mg/m³	5.0	8021B/8015B	N/A	12/16/05	MO	ML2051215
TVFHC (C6-C10)-ppmv	**889.19**	120.00	D2	ppmv	5.00	8021B/8015B	N/A	12/16/05	MO	ML2051215B
Bromofluorobenzene(Surrogate)	91	61-135		%REC	5.0	8021B/8015B	N/A	12/16/05	MO	ML2051215

TRANSWEST GEOCHEM

Date Printed 17-Jan-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0512243
Lab ID: 0512243-02
Project Name: Toole Ave
Project Number:

Client Sample ID: Toole-Post Dilution
Collection Date: 12/15/2005 8:55:00 AM
Matrix: Soil Vapor

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene	**13**	2.5	D1	mg/m³	5.0	8021B/8015B	N/A	12/16/05	MO	ML2051215
Benzene-ppmv	**4.22**	0.80	D1	ppmv	5.00	8021B/8015B	N/A	12/16/05	MO	ML2051215B
Toluene	**80**	5.0	D2	mg/m³	5.0	8021B/8015B	N/A	12/16/05	MO	ML2051215
Toluene-ppmv	**21.14**	1.35	D2	ppmv	5.00	8021B/8015B	N/A	12/16/05	MO	ML2051215B
Ethylbenzene	**31**	5.0	D1	mg/m³	5.0	8021B/8015B	N/A	12/16/05	MO	ML2051215
Ethylbenzene-ppmv	**7.04**	1.15	D1	ppmv	5.00	8021B/8015B	N/A	12/16/05	MO	ML2051215B
Xylenes, total	**130**	7.5	D1	mg/m³	5.0	8021B/8015B	N/A	12/16/05	MO	ML2051215
Xylenes, total-ppmv	**29.39**	1.75	D1	ppmv	5.00	8021B/8015B	N/A	12/16/05	MO	ML2051215B
TVFHC (C6-C10)	**3000**	500	D2	mg/m³	5.0	8021B/8015B	N/A	12/16/05	MO	ML2051215
TVFHC (C6-C10)-ppmv	**741.62**	120.00	D2	ppmv	5.00	8021B/8015B	N/A	12/16/05	MO	ML2051215B
Bromofluorobenzene(Surrogate)	92	61-135		%REC	5.0	8021B/8015B	N/A	12/16/05	MO	ML2051215

TRANSWEST GEOCHEM

Date Printed 17-Jan-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0512243
Lab ID: 0512243-03
Project Name: Toole Ave
Project Number:

Client Sample ID: Toole-Effluent
Collection Date: 12/15/2005 9:00:00 AM
Matrix: Soil Vapor

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene	<0.50	0.50		mg/m³	1.0	8021B/8015B	N/A	12/16/05	MO	ML2051215
Benzene-ppmv	<0.16	0.16		ppmv	1.00	8021B/8015B	N/A	12/16/05	MO	ML2051215B
Toluene	<1.0	1.0		mg/m³	1.0	8021B/8015B	N/A	12/16/05	MO	ML2051215
Toluene-ppmv	<0.27	0.27		ppmv	1.00	8021B/8015B	N/A	12/16/05	MO	ML2051215B
Ethylbenzene	<1.0	1.0		mg/m³	1.0	8021B/8015B	N/A	12/16/05	MO	ML2051215
Ethylbenzene-ppmv	<0.23	0.23		ppmv	1.00	8021B/8015B	N/A	12/16/05	MO	ML2051215B
Xylenes, total	<1.5	1.5		mg/m³	1.0	8021B/8015B	N/A	12/16/05	MO	ML2051215
Xylenes, total-ppmv	<0.35	0.35		ppmv	1.00	8021B/8015B	N/A	12/16/05	MO	ML2051215B
TVFHC (C6-C10)	<100	100		mg/m³	1.0	8021B/8015B	N/A	12/16/05	MO	ML2051215
TVFHC (C6-C10)-ppmv	<24.00	24.00		ppmv	1.00	8021B/8015B	N/A	12/16/05	MO	ML2051215B
Bromofluorobenzene(Surrogate)	97	61-135		%REC	1.0	8021B/8015B	N/A	12/16/05	MO	ML2051215

TRANSWEST GEOTECH

Date: 17-Jan-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0512243
Project: Toole Ave

QC SUMMARY REPORT

Method Blank

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Benzene-ppmv	<0.16	0.16		ppmv	1	8021B/8015B	N/A	5/15/05	MO	ML2051215B
Toluene-ppmv	<0.27	0.27		ppmv	1	8021B/8015B	N/A	5/15/05	MO	ML2051215B
Ethylbenzene-ppmv	<0.23	0.23		ppmv	1	8021B/8015B	N/A	5/15/05	MO	ML2051215B
Xylenes, total-ppmv	<0.35	0.35		ppmv	1	8021B/8015B	N/A	5/15/05	MO	ML2051215B
TVFHC (C6-C10)-ppmv	<24.00	24.00		ppmv	1	8021B/8015B	N/A	5/15/05	MO	ML2051215B
Benzene	<0.50	0.50		mg/m³	1	8021B/8015B	N/A	5/15/05	MO	ML2051215
Toluene	<1.0	1.0		mg/m³	1	8021B/8015B	N/A	5/15/05	MO	ML2051215
Ethylbenzene	<1.0	1.0		mg/m³	1	8021B/8015B	N/A	5/15/05	MO	ML2051215
Xylenes, total	<1.5	1.5		mg/m³	1	8021B/8015B	N/A	5/15/05	MO	ML2051215
TVFHC (C6-C10)	<100	100		mg/m³	1	8021B/8015B	N/A	5/15/05	MO	ML2051215
Bromofluorobenzene	94	61-135		%REC	1	8021B/8015B	N/A	5/15/05	MO	ML2051215
Benzene-ppmv	<0.16	0.16		ppmv	1	8021B/8015B	N/A	12/16/05	MO	ML2051215B
Toluene-ppmv	<0.27	0.27		ppmv	1	8021B/8015B	N/A	12/16/05	MO	ML2051215B
Ethylbenzene-ppmv	<0.23	0.23		ppmv	1	8021B/8015B	N/A	12/16/05	MO	ML2051215B
Xylenes, total-ppmv	<0.35	0.35		ppmv	1	8021B/8015B	N/A	12/16/05	MO	ML2051215B
TVFHC (C6-C10)-ppmv	<24.00	24.00		ppmv	1	8021B/8015B	N/A	12/16/05	MO	ML2051215B
Benzene	<0.50	0.50		mg/m³	1	8021B/8015B	N/A	12/16/05	MO	ML2051215
Toluene	<1.0	1.0		mg/m³	1	8021B/8015B	N/A	12/16/05	MO	ML2051215
Ethylbenzene	<1.0	1.0		mg/m³	1	8021B/8015B	N/A	12/16/05	MO	ML2051215
Xylenes, total	<1.5	1.5		mg/m³	1	8021B/8015B	N/A	12/16/05	MO	ML2051215
TVFHC (C6-C10)	<100	100		mg/m³	1	8021B/8015B	N/A	12/16/05	MO	ML2051215
Bromofluorobenzene	96	61-135		%REC	1	8021B/8015B	N/A	12/16/05	MO	ML2051215

TRANSWEST GEOCHEM

Date: 17-Jan-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0512243
Project: Toole Ave

QC SUMMARY REPORT

Sample Duplicate

Analyte	Result	PQL	Units	RPD Ref Val	% RPD	RPD Limit	Test Code	Date Prepared	Date Analyzed	Analyst	Qual
Sample ID: **0512241-01AD** Batch ID: ML2051215											
Client ID:											
Benzene	1.800	0.50	mg/m³	1.600	12%	30	8021B/8015B	N/A	5/15/05	MO	
Toluene	<1.0	1.0	mg/m³	<1.0	0%	30	8021B/8015B	N/A	5/15/05	MO	
Ethylbenzene	<1.0	1.0	mg/m³	<1.0	0%	30	8021B/8015B	N/A	5/15/05	MO	
Xylenes, total	<1.5	1.5	mg/m³	<1.5	0%	30	8021B/8015B	N/A	5/15/05	MO	
TVFHC (C6-C10)	263.1	100	mg/m³	258.0	2%	30	8021B/8015B	N/A	5/15/05	MO	
Sample ID: **0512243-02AD** Batch ID: ML2051215											
Client ID: **Toole-Post Dilution**											
Benzene	13.15	2.5	mg/m³	13.46	2%	30	8021B/8015B	N/A	12/16/05	MO	
Toluene	78.11	5.0	mg/m³	79.54	2%	30	8021B/8015B	N/A	12/16/05	MO	
Ethylbenzene	30.20	5.0	mg/m³	30.54	1%	30	8021B/8015B	N/A	12/16/05	MO	
Xylenes, total	125.87	7.5	mg/m³	127.4	1%	30	8021B/8015B	N/A	12/16/05	MO	
TVFHC (C6-C10)	2934	500	mg/m³	3033	3%	30	8021B/8015B	N/A	12/16/05	MO	
Sample ID: **0512267-10AD** Batch ID: ML2051215											
Client ID:											
Benzene	<0.50	0.50	mg/m³	<0.50	0%	30	8021B/8015B	N/A	12/16/05	MO	
Toluene	<1.0	1.0	mg/m³	<1.0	0%	30	8021B/8015B	N/A	12/16/05	MO	
Ethylbenzene	<1.0	1.0	mg/m³	<1.0	0%	30	8021B/8015B	N/A	12/16/05	MO	
Xylenes, total	<1.5	1.5	mg/m³	<1.5	0%	30	8021B/8015B	N/A	12/16/05	MO	
TVFHC (C6-C10)	<100	100	mg/m³	<100	0%	30	8021B/8015B	N/A	12/16/05	MO	

TRANSWEST GEOCHEM

Date: 17-Jan-06

License No. AZM133/AZ0133

CLIENT: City of Tucson, Environmental Services
Work Order: 0512243
Project: Toole Ave

QC SUMMARY REPORT

Blank Spike

Analyte	Result	PQL	SPK value	SPK Ref Val	% Rec	Low Limit	High Limit	RPD Ref Val	% RPD	RPD Limit	Qual
Sample ID: **LCS 12/15/05**	Batch ID: ML2051215			Test Code: 8021B/8015B				Date Analyzed: 05/15/05 00:00			
				Units mg/m³				Date Prepared: N/A			
Benzene	5.400	0.50	5.000		108%	70	130				
Toluene	5.400	1.0	5.000		108%	70	130				
Ethylbenzene	4.700	1.0	5.000		94%	70	130				
Xylenes, total	13.648	1.5	15.00		91%	70	130				
TVFHC (C6-C10)	234.6	100	250.0		94%	70	130				
Bromofluorobenzene	9.600	0.50	10.00		96%	61	135				
Sample ID: **LCS 12/16/05**	Batch ID: ML2051215			Test Code: 8021B/8015B				Date Analyzed: 12/16/05 00:00			
				Units mg/m³				Date Prepared: N/A			
Benzene	5.500	0.50	5.000		110%	70	130				
Toluene	5.500	1.0	5.000		110%	70	130				
Ethylbenzene	5.100	1.0	5.000		102%	70	130				
Xylenes, total	15.463	1.5	15.00		103%	70	130				
TVFHC (C6-C10)	255.6	100	250.0		102%	70	130				
Bromofluorobenzene	9.700	0.50	10.00		97%	61	135				

TRANSWEST GEOCHEM

Sample Receipt Checklist

Client Name: City of Tucson

Date and Time Received: 12-15-05 1600

Work Order Number: 0512243

Checked by: lm

Checklist completed by: Leslie May 12-15-05
Signature / Date

Logged In by: SH 12/15/05
Initials / Date

Matrix: U

Carrier Name: Client KQ Express H

Reviewed by: JP 12/20
Initials / Date

				COMMENTS
Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑	
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Container/Temp Blank temperature in compliance?	Yes ☐	No ☑	Temp: Ambient	Sampled < 2hrs ☐
Water – VOA vials have zero headspace?	Yes ☐	No ☐	N/A ☑	
Water – pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	
Water – Sulfides present in Cyanide samples?	Yes ☐	No ☐	N/A ☑	

Adjusted ? _____ Checked by: _____

Client contacted: _____ Date contacted: _____ Person contacted: _____

Contacted by: _____ Regarding: _____

Corrective Action: _____

TRANSWEST GEOCHEM

Sample Receipt Checklist

Client Name: COT-ES-

Date and Time Received: 12/15/05 09:30

Work Order Number: 0512243

Received by: Keith Kerola

Checklist completed by: Keith K. 12/15/05
Signature / Date

Logged In by: _____
Initials / Date

Matrix: Air

Carrier Name: Verdad

Reviewed by: _____
Initials / Date

				COMMENTS
Shipping container/cooler in good condition?	Yes ☑ KE	No ☐	Not Present ☑	
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑	
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐	N/A ☐	
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	Temp: 19.6°C → Tedlar Bags	
Water – VOA vials have zero headspace?	Yes ☐	No ☐	N/A ☑	
Water – pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	
Water – Sulfides present in Cyanide samples?	Yes ☐	No ☐	N/A ☑	

Adjusted ? _____ Checked by: _____

Client contacted: _____ Date contacted: _____ Person contacted: _____

Contacted by: _____ Regarding: _____

Corrective Action: _____

TRANSWEST GEOCHEM

3725 E. Atlanta Ave., Ste 2
Phoenix, Arizona 85040
Phone: (602) 437-0330
Fax: (602) 437-0660

3860 S. Palo Verde Rd., Ste. 301
Tucson, Arizona 85714
Phone: (520) 573-1061
Fax: (520) 573-1063

Chain of Custody

TGI Work Order No: 0512245

Date 12/15/05 Page 1 of 1

Project Manager:	Molly Collins
Client Name:	City of Tucson ES
Address:	
City, State ZIP:	
Phone:	Fax:

Bill to:	City of Tucson ES
Company:	
Address:	
City, State ZIP:	
Phone:	Fax:

P.O. No.:	
Project Name:	Toole Ave
Project Number:	

SAMPLE RECEIPT

Temperature:	19.6°C	Ice:	
Received Intact:	Yes No N/A	Absent / Present	
Custody Seals:	Yes No N/A	Wet / Blue	
Total No. of Containers:	3		

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Lab ID	No. of Containers	TPH, 8015AZR.1	BTEX (8021B)	Volatile Organics GCMS (624/8260AZ)	SDWA Volatiles, (524.2)	Semi-Volatile Organics GCMS (625/8270)	Organochlorine Pesticides (608/8081)	PCB's, (8082)	PAH, EPA 8310	8 RCRA Metals	Comments
Toole-Influent	VA	12/15	0950	01	1	X	X								
Toole-Post Dilution	"	12/15	0855	02	1	X	X								
Toole-Effluent	"	12/15	0900	03	1	X	X								

Relinquished by: (Signature)	(Print Name)	Received by: (Signature)	(Print Name)	Date/Time
1 Matt Wallace	Matt Wallace	Keith Konola	Keith Konola	12/15/05 09:30
2 Keith Konola	Keith Konola		Express It	12/15/05 10:00
3	Express It	Leslie May	Leslie May	12-15-05 1600

White copy to TGI, Yellow copy for final report, Pink copy to sampler

Revised : 7/21/2004

APPENDIX 4

CURRENT & PREVIOUS LABORATORY DATA SUMMARY TABLE

Table 1:
Current and Previous Soil Boring Sampling Results
35 East Toole Avenue, Tucson, Arizona
EEC Project 206100.29

	Date	TPH C_{10}-C_{32}	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Methyl tert-butyl ether
		reported in mg/kg					
Residential SRL [1]		none	0.65	650	400	270	320
GPL [2]		none	0.71	400	120	2,200	none
Borings in Proximity to the Dispenser Island							
B5-5	1993	<20	<0.025	0.044	<0.025	0.051	NA
CB-3-10'	2006	<130	<0.05	<0.1	<0.1	<0.15	<0.25
B5-15	1993	4,700	16	410	200	1,100	NA
P1-15	2004	<130	<0.05	<0.1	<0.1	<0.15	<0.25
CB-3-20'	2006	220	<0.05	<0.1	<0.1	0.76	<0.25
B5-25	1993	1,800	25	240	65	290	NA
CB-3-30'	2006	<130	<0.05	<0.1	<0.1	<0.15	<0.25
B5-35	1993	2,000	22	270	83	480	NA
P1-35	2004	<130	0.15	0.49	0.11	0.62	7.3
P1-40	2004	<130	0.15	0.52	0.11	0.63	8.4
CB-3-40'	2006	370	<0.05	<0.1	28	350	<0.25
B5-45	1993	1,500	41	390	63	280	NA
CB-3-50'	2006	520	<0.05	<0.1	<0.1	<0.15	<0.25
Borings in Proximity to the UST Pit							
CB-1-10'	2006	<130	<0.05	<0.1	<0.1	<0.15	<0.25
B1-15	1993	84	0.027	0.72	0.18	0.94	NA
B1-20	1993	800	1.3	44	36	180	NA
CB-1-20'	2006	<130	<0.05	<0.1	<0.1	<0.15	<0.25
B1-30	1993	2,100	16	52	55	230	NA
CB-1-30'	2006	<130	<0.05	<0.1	<0.1	<0.15	<0.25
P3-35	2004	<130	0.85	1.8	0.34	1.5	16
B1-40	1993	1,700	18	190	63	280	NA
P3-40	2004	<130	<0.05	<0.1	<0.1	<0.15	5.5
CB-1-40'	2006	<130	<0.05	<0.1	<0.1	<0.15	<0.25
P3-45	2004	<130	0.086	0.17	0.11	0.32	10
B1-50	1993	960	11	130	34	150	NA
CB-1-50'	2006	<130	<0.05	<0.1	<0.1	<0.15	<0.25
Borings in Proximity to the Unknown Release							
CB-2-10'	2006	1,700	<0.05	<0.1	<0.1	<0.15	<0.25
CB-4-10'	2007	<130	<0.05	<0.1	<0.1	<0.15	<0.25
B4-15	1993	19,000	0.2	0.068	0.3	1.4	NA
P2-15	2004	<20	<0.05	0.24	<0.1	<0.15	<0.25
CB-2-20'	2006	10,900	<0.2	<0.2	<0.2	<0.2	<0.25
CB-4-20'	2007	5,500	<0.05	<0.1	<0.1	<0.15	<0.25
B4-25	1993	13,000	3.6	0.15	0.6	1.5	NA
B4-30	1993	25,000	37	83	8	17	NA
P2-30	2004	3,800	1.4	<1	<1	<1.5	<2.5
CB-2-30'	2006	4,500	4	1.2	1.7	27	2.2
CB-5-30'	2007	<130	<0.05	<0.1	<0.1	<0.15	<0.25
B4-40	1993	<20	0.092	<0.025	<0.025	<0.025	NA
P2-40	2004	26,000	6.8	1.2	0.59	2.3	2.7
CB-2-40'	2006	<130	<0.05	<0.1	<0.1	<0.15	<0.25
CB-4-40'	2007	<130	<0.05	<0.1	<0.1	<0.15	<0.25
B4-50	1993	<20	0.069	0.072	<0.025	<0.025	NA
CB-2-50'	2006	<130	<0.05	<0.1	<0.1	<0.15	<0.25
CB-4-50'	2007	<130	<0.05	<0.1	<0.1	<0.15	<0.25

2006 Laboratory Data | 2007 Laboratory Data

[1] 2007 Arizona Soil Residential Remedial Levels

[2] Arizona Groundwater Protection Levels

NA = Not Analyzed

Table 1A:
Current and Previous Soil Boring Sampling Results
35 East Toole Avenue, Tucson, Arizona
EEC Project 206100.29

	Date	PAHs	Detected PAH Compunds		
			Fluorene	Indeno(1,2,3-cd)pyrene	Pyrene
		D[1]/ND[2]/NA[3]	reported in mg/kg		
Residential SRL [4]			2,700	**0.69**	2,300
Borings in Proximity to the Dispenser Island					
B5-5	1993	NA	NA	NA	NA
CB-3-10'	2006	NA	NA	NA	NA
B5-15	1993	NA	NA	NA	NA
P1-15	2004	NA	NA	NA	NA
CB-3-20'	2006	NA	NA	NA	NA
B5-25	1993	NA	NA	NA	NA
CB-3-30'	2006	NA	NA	NA	NA
B5-35	1993	NA	NA	NA	NA
P1-35	2004	NA	NA	NA	NA
P1-40	2004	ND	ND	ND	ND
CB-3-40'	2006	NA	NA	NA	NA
B5-45	1993	NA	NA	NA	NA
CB-3-50'	2006	NA	NA	NA	NA
Borings in Proximity to the UST Pit					
CB-1-10'	2006	NA	NA	NA	NA
B1-15	1993	NA	NA	NA	NA
B1-20	1993	NA	NA	NA	NA
CB-1-20'	2006	NA	NA	NA	NA
B1-30	1993	NA	NA	NA	NA
CB-1-30'	2006	NA	NA	NA	NA
P3-35	2004	ND	ND	ND	ND
B1-40	1993	NA	NA	NA	NA
P3-40	2004	NA	NA	NA	NA
CB-1-40'	2006	NA	NA	NA	NA
P3-45	2004	NA	NA	NA	NA
B1-50	1993	NA	NA	NA	NA
CB-1-50'	2006	NA	NA	NA	NA
Borings in Proximity to the Unknown Release					
CB-2-10'	2006	NA	NA	NA	NA
CB-4-10'	2007	ND	ND	ND	ND
B4-15	1993	NA	NA	NA	NA
P2-15	2004	NA	NA	NA	NA
CB-2-20'	2006	NA	NA	NA	NA
CB-4-20'	2007	NA	NA	NA	NA
B4-25	1993	NA	NA	NA	NA
B4-30	1993	NA	NA	NA	NA
P2-30	2004	NA	NA	NA	NA
CB-2-30'	2006	NA	NA	NA	NA
CB-5-30'	2007	ND	ND	ND	ND
B4-40	1993	NA	NA	NA	NA
P2-40	2004	D	0.62	**1.8**	0.64
CB-2-40'	2006	NA	NA	NA	NA
CB-4-40'	2007	NA	NA	NA	NA
B4-50	1993	NA	NA	NA	NA
CB-2-50'	2006	NA	NA	NA	NA
CB-4-50'	2007	NA	NA	NA	NA

2006 Laboratory Data | 2007 Laboratory Data

[1] D = Detected, see following columns for compounds and concentrations

[2] ND = Not Detected

[3] NA = Not Analyzed

[4] 2007 Arizona Soil Residential Remedial Levels

[5] Arizona Groundwater Protection Levels

Table 2: 2006 Laboratory Detections from Confirmation Boring 1 (CB-1) [UST Pit]

	Analyte	Depth						SRL_R	GPL
		10'*	20'*	30'	40'*	50'*	DUP-1**		
mg/kg	GRO (C_6-C_{10})	ND	ND	ND	ND	ND	42	NS	NS
	Naphthalene (mg/Kg)	ND	ND	0.39	ND	ND	ND	56	NS

* There were no laboratory detections for any of the contaminants of concern for the 10, 20, 40 and 50 foot depths
** DUP-1 was a blind duplicate collected for QA/QC from the 40' depth of CB-1
SRL_R = 2007 State of Arizona residential soil remediation level
GPL=Groundwater Protection Level
ND = Not detected
NS = No standard
NA = Not Analyzed

Table 3: 2006 Laboratory Detections from Confirmation Boring 2 (CB-2) [Fuel Spill Area]

	Analyte	Depth						SRL_R	GPL
		10'	20'	30'	40'*	50'*	DUP-2**		
Results in mg/kg	TPH (C_{10}-C_{32})	1,700	10,900	4,500	ND	ND	ND	NS	NS
	1,2,4-Trimethylbenzene	ND	ND	6.8	ND	ND	6.5	NS	NS
	1,3,5-Trimethylbenzene	ND	ND	0.45	ND	ND	0.34	NS	NS
	Benzene	ND	ND	4	ND	ND	3.8	0.65	0.71
	Ethylbenzene	ND	ND	1.7	ND	ND	1.5	400	120
	Isopropylbenzene	ND	ND	1.1	ND	ND	1.1	NS	NS
	Methyl tert-butyl ether	ND	ND	2.2	ND	ND	2.3	320	NS
	n-Butylbenzene	ND	ND	0.4	ND	ND	0.38	240	NS
	n-propylbenzene	ND	ND	2.1	ND	ND	2.0	240	NS
	Napthalene	ND	ND	0.36	ND	ND	0.31	56	NS
	sec-Butylbenzene	ND	ND	0.39	ND	ND	0.37	220	NS
	Toluene	ND	ND	1.2	ND	ND	1.0	650	400
	Xylenes (total)	ND	ND	27.0	ND	ND	25.0	270	2,200

* There were no laboratory detections for any of the contaminants of concern for the 40 and 50 foot depths
** DUP-2 was a blind duplicate collected for QA/QC from the 30' depth of CB-2
SRL_R = 2007 State of Arizona residential soil remediation level
GPL=Groundwater Protection Level
ND = Not detected
NS = No standard
NA = Not Analyzed

Table 4: 2006 Laboratory Detections from Confirmation Boring 3 (CB-3) [Dispensers]

	Analyte	Depth							SRL_R	GPL
		10'	20'	30'	40'	50'	60'	DUP-3*		
Results in mg/kg	GRO (C_6-C_{10})	ND	ND	ND	690	36	95	ND	NS	NS
	TPH (C_{10}-C_{32})	ND	220	110	370	520	460	80	NS	NS
	1,2,4-Trimethylbenzene	ND	3.4	0.96	130	6.1	10	2.1	NS	NS
	1,3,5-Trimethylbenzene	ND	0.83	0.45	37	1.1	2.3	0.53	NS	NS
	4-Isopropyltoluene	ND	ND	ND	1.5	ND	ND	ND	NS	NS
	Ethylbenzene	ND	ND	ND	28	ND	0.22	ND	400	120
	Isopropylbenzene	ND	ND	ND	10	ND	ND	ND	NS	NS
	n-Butylbenzene	ND	0.4	ND	9.7	2.2	3.4	0.28	240	NS
	n-propylbenzene	ND	0.29	ND	29	ND	0.83	ND	240	NS
	Napthalene	ND	4.8	1.2	21	12	16	3.1	56	NS
	sec-Butylbenzene	ND	ND	ND	3.6	0.27	0.36	ND	220	NS
	Xylenes (total)	ND	0.76	ND	350	ND	2.3	0.2	270	2,200

* DUP-3 was a blind duplicate collected for QA/QC from the 20' depth of CB-3
SRL_R = 2007 State of Arizona residential soil remediation level
GPL=Groundwater Protection Level
ND = Not detected
NS = No standard
NA = Not Analyzed

Table 5: 2007 Laboratory Data from Confirmation Borings 4 & 5 (CB-4 & CB-5)[1]

	Analyte	Depth						SRL_R	GPL
		10'	20'	30'	40'	50'	DUP 1[2]		
(mg/kg)	TPH (C_{10}-C_{32})	ND	5,500	ND	ND	ND	ND	NS	NS
	PAH	ND	NA	ND	NA	NA	NA	**	**

[1] Table summarizes detections only
[2] DUP-1 was a blind duplicate collected for QA/QC from the 30' depth of CB-5
** SRLs and GPLs for individaul PAH compounds are attached
SRL_R = 2007 State of Arizona residential soil remediation level
GPL=Groundwater Protection Level
ND = Not detected
NS = No standard
NA = Not Analyzed

Regulatory Levels for EPA 8310 PAH Compounds

	Analyte	SRL_R	GPL
Given in mg/kg	Acenaphthene	3,700	3,900
	Acenaphthylene	NS	NS
	Anthracene	22,000	20,000
	Benz[a]anthracene	0.69	6
	Benzo(a)pyrene	0.069	1
	Benzo[b]fluoranthene	0.69	6
	Benzo[g,h,i]perylene	NS	NS
	Benzo[k]fluoranthene	6.9	61
	Chrysene	68	610
	Dibenz[a,h]anthracene	0.069	1
	Fluoranthene	2,300	2600
	Fluorene	2,700	2,600
	Ideno[1,2,3-cd]pyrene	0.69	6
	Napthalene	56	2,600
	Phenanthrene	NS	NS
	Pyrene	2,300	2,000

NS = No Standard

APPENDIX 5

HEALTH AND SAFETY PLAN SIGNATURE SHEET

EEC Tailgate Safety Meeting

Client: City of Tucson ES Location: 35 E. Toole Ave.

Job Number: Date: 6/14/07 Time: 0700

Type of Work: Confirmation Boring

Project Manager: Kevin Pierce Site Safety Officer: Chad Hancock

Safety Topics Covered

Protective Clothing Required: Hard hat / steel toed boots (Level D)

Chemical Hazards: Potential fuel / hydrocarbon vapors.

Physical Hazards: Heat / Drill Rig

Special Equipment Required: Drill Rig - PID

Emergency Procedures: On site first Aid & Transport to St. Marys Hospital

Hospital: St. Marys.

Hospital Address: St. Marys & Silverbell (SW corner)

Emergency Phone: ( ) 911 Hospital Phone: ( )

Other:

Attendees

Printed Name	Signature	Company/Organization
Jesus Pacheco	[illegible]	Layne
Guy Hannigan	[illegible]	Layne
Kevin A. Pierce	[illegible]	EEC

Meeting Conducted By: Chad S. Hancock *Signature:* [illegible]

APPENDIX 6

DRILLING LOGS

BORING NUMBER CB-4

CLIENT City of Tucson
PROJECT NAME Confirmation Soil Sampling
PROJECT NUMBER 206100.29
PROJECT LOCATION 35 East Toole Ave, Tucson, Arizona
DATE STARTED 6/14/07 COMPLETED 6/14/07
GROUND ELEVATION 2373 ft HOLE SIZE 10 Inches
DRILLING CONTRACTOR Layne Christensen Company
GROUND WATER LEVELS:
DRILLING METHOD Hollow Stem Auger
AT TIME OF DRILLING ---
LOGGED BY Hancock CHECKED BY Pierce
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0					SILTY SAND (SM) light to medium brown soil, very slightly moist	
5						
10					10.0 2363.0	
	SS	14-12-24 (36)	0		WELL GRADED SAND (SW) medium brown soil, medium dense, slightly moist	
					hard drilling - cobbles	
15					easier drilling	
					increasing clay	
20					slight fuel-like odor 20.0 2353.0	
	SS	13-15-50/5"	8		CLAYEY SAND (SC) medium to dark brown soil witha few small gravels, medium dense, slightly moist slight fuel-like odor	
25						

(Continued Next Page)

BORING NUMBER CB-4

CLIENT City of Tucson

PROJECT NAME Confirmation Soil Sampling

PROJECT NUMBER 206100.29

PROJECT LOCATION 35 East Toole Ave, Tucson, Arizona

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
25					CLAYEY SAND (SC) medium to dark brown soil witha few small gravels, medium dense, slightly moist *(continued)* harder drilling very hard drilling, large cobble or boulder	
30	SS	100/4"	0		NO SAMPLE RETURN continue drilling, very hard soil easier drilling	
35				35.0	2338.0	
	SS	8-17-50 (67)	0		CLAYEY SAND (SC) medium brown soil with a few small gravels, medium dense	
40				40.0	2333.0	
	SS	8-11-28 (39)	0		SANDY CLAY (CL) medium brown soil, very stiff, slightly moist	
45						
50				50.0	2323.0	
	SS	25-50/5"	0		CLAYEY SAND (SC) medium brown soil with small gravels, very dense, slightly moist Bottom of hole at 50.0 feet.	

ENVIRONMENTAL BH 206100.06 FINAL.GPJ GINT US LAB.GDT 8/1/07

BORING NUMBER CB-5

CLIENT City of Tucson
PROJECT NAME Confirmation Soil Sampling
PROJECT NUMBER 206100.29
PROJECT LOCATION 35 East Toole Ave, Tucson, Arizona
DATE STARTED 6/14/07 COMPLETED 6/14/07
GROUND ELEVATION 2373 ft HOLE SIZE 10 inches
DRILLING CONTRACTOR Layne Christensen Company
GROUND WATER LEVELS:
DRILLING METHOD Hollow Stem Auger
AT TIME OF DRILLING ---
LOGGED BY Hancock CHECKED BY Pierce
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0					SILTY SAND (SM) light to medium brown soil, very slightly moist	
5						
10						
15					same soil profile, dark brown with very small gravels, very slightly moist	
20					Incresing clays, light fuel-like odor	
					harder drilling	
25					sand-clay mix, dark brown, slight fuel-like odor, slightly moist	
30				30.0	2343.0	
	SS	40-50/5"	36		CLAYEY SAND (SC) medium to dark brown soils with a few small gravels, very dense, slightly moist slight fuel-like odor Bottom of hole at 30.0 feet.	

ENVIRONMENTAL BH 206100.05 FINAL.GPJ GINT US LAB.GDT 8/1/07

APPENDIX 7

2007 LABORATORY ANALYTICAL REPORTS

JUL 9 -- 2007

TRANSWEST GEOCHEM

July 02, 2007

Kevin Pierce
Environmental & Engineering Consultants, Inc.
4625 E. Ft. Lowell Rd.
Tucson, AZ 85712

RE: 35 E Toole Ave/206100
Work Order No.: 0706280

Dear Kevin,

Transwest Geochem, Inc. received 8 samples on 6/14/07. The results of the analyses are presented in the following report.

The Case Narrative of this report addresses any Quality Control and/or Quality Assurance issues associated with this Work Order.

If you have any questions regarding these test results, please feel free to call us at (602) 437-0330.

Sincerely,

Tracy Dutton

Tracy Dutton
Project Manager

ADHS License No. AZM133/AZ0133

3725 E. Atlanta Avenue • Phoenix, Arizona 85040 • (602) 437-0330 • (800)-927-5183 • Fax (602) 437-0660
2860 S. Palo Verde Rd. • Suite 301 • Tucson, Arizona 85714 • (520) 573-1061 • Fax (520) 573-1063

Date Printed: 02-Jul-07

Client: Environmental & Engineering Consultants, I
Work Order: 0706280
Project Name: 35 E Toole Ave
Project Number: 206100

Case Narrative

All method blanks, laboratory spikes, and/or matrix spikes met quality control objectives for the parameters associated with this Work Order except as detailed below or on the Data Qualifier page of this report. Data Qualifiers used in this report are in accordance with ADEQ Arizona Data Qualifiers, Revision 2.0 11/26/2003.

Data qualifiers ("flags") contained within this analytical report have been issued to explain a quality control deficiency, and do not affect the quality (validity) of the data unless noted otherwise in the case narrative.

The samples were received at a temperature outside of the 2-6 degrees C range required for compliance, and more than 2 hours after sampling.

Analytical Comments for Method SW8260B, Laboratory Control Spike LCS, Batch N70616A: MS/MSD were not analyzed due to autosampler failure (Low helium). LCS/LCSD met recovery and RPD acceptance criteria.

Analytical Comments for Method SW8260B, Laboratory Control Spike Duplicate LCSD, Batch N70616A: MS/MSD were not analyzed due to autosampler failure (Low helium). LCS/LCSD met recovery and RPD acceptance criteria.

3725 E. Atlanta Avenue • Phoenix, Arizona 85040 • (602) 437-0330 • (800)-927-5183 • Fax (602) 437-0660
2960 S. Palo Verde Rd. • Suite 201 • Tucson, Arizona 85714 • (520) 573-1061 • Fax (520) 573-1063

TRANSWEST GEOCHEM

Date Printed 26-Jun-07

License No. AZM133/AZ0133

CLIENT:	Environmental & Engineering Consultants,
Project Name:	35 E Toole Ave
Project Number:	206100
Work Order:	0706280
Date Received:	14-Jun-07

Case Narrative
Data Qualifiers

One or more of the following data qualifiers may be associated with your analytical and/or quality control data.

D1	Sample required dilution due to matrix.
D2	Sample required dilution due to high concentration of target analyte.
L2	The associated blank spike recovery was below laboratory acceptance limits.
S8	The analysis of the sample required a dilution such that the surrogate recovery calculation does not provide any useful information. The method control sample recovery was acceptable.
V1	CCV recovery was above method acceptance limits. This target analyte was not detected in the sample.

TRANSWEST GEOCHEM

Date Printed 26-Jun-07

License No. AZM133/AZ0133

CLIENT: Environmental & Engineering Consultants,
Project Name: 35 E Toole Ave
Project Number: 206100
Work Order: 0706280

Work Order Sample Summary

Client Sample ID	Lab Sample ID	Test Code	Collection Date	Date Received
Dup 1	0706280-01A	8015AZ	6/14/07 12:00 AM	6/14/07 03:47 PM
	0706280-01B	SW8260B	6/14/07 12:00 AM	6/14/07 03:47 PM
CB-4-10'	0706280-02A	8015AZ	6/14/07 07:45 AM	6/14/07 03:47 PM
		EPA 8310	6/14/07 07:45 AM	6/14/07 03:47 PM
	0706280-02B	SW8260B	6/14/07 07:45 AM	6/14/07 03:47 PM
CB-4-20'	0706280-03A	8015AZ	6/14/07 08:00 AM	6/14/07 03:47 PM
	0706280-03B	SW8260B	6/14/07 08:00 AM	6/14/07 03:47 PM
CB-4-40'	0706280-04A	8015AZ	6/14/07 09:32 AM	6/14/07 03:47 PM
	0706280-04B	SW8260B	6/14/07 09:32 AM	6/14/07 03:47 PM
CB-4-50'	0706280-05A	8015AZ	6/14/07 10:10 AM	6/14/07 03:47 PM
	0706280-05B	SW8260B	6/14/07 10:10 AM	6/14/07 03:47 PM
CB-5-30'	0706280-06A	8015AZ	6/14/07 02:05 PM	6/14/07 03:47 PM
		EPA 8310	6/14/07 02:05 PM	6/14/07 03:47 PM
	0706280-06B	SW8260B	6/14/07 02:05 PM	6/14/07 03:47 PM
Equip Blank	0706280-07A	8015B, MOD	6/14/07 02:30 PM	6/14/07 03:47 PM
	0706280-07B	SW8260B	6/14/07 02:30 PM	6/14/07 03:47 PM
	0706280-07C	EPA 8310	6/14/07 02:30 PM	6/14/07 03:47 PM
Trip Blank	0706280-08A	SW8260B	6/14/07 12:00 AM	6/14/07 03:47 PM

TRANSWEST GEOCHEM

Date Printed 26-Jun-07

License No. AZM133/AZ0133

CLIENT: Environmental & Engineering Consultants,
Project Name: 35 E Toole Ave
Project Number: 206100
Work Order: 0706280
Date Received: 14-Jun-07

Definitions

Analytical Spike (AS)	The AS is a known amount of a target analyte added to a sample after it has been distilled, digested, or extracted and is ready for analysis. The AS is generally performed if the MS has failed. It is used to indicate interference that arises from sample distillation, digestion, or extraction as opposed to interference that is innate to the matrix.
Continuing Curve Verification (CCV)	The CCV is also referred to as a curve check. This is a standard analyzed at specified intervals during an analysis. The CCV verifies the stability and accuracy of the calibration curve. There are specific CCV recovery acceptance criteria for each method.
Dilution Factor (DF)	The DF is an indication of how much a sample had to be diluted in order to quantitate it on a standard curve. The DF is indicated in the reported sample result. The sample PQL increases as the dilution increases.
Internal Standard (IS)	The IS is a compound that is similar to the organic compound of interest in terms of chemical composition but is unique in that it is rare in the environment. The same concentration of IS is added to every sample for some organic methods.
Laboratory Control Sample (LCS)	The LCS is also referred to as a blank spike. The LCS is an addition of a known amount of a target analyte (from the same source as calibration standards or spikes) to an aliquot of deionized water or other appropriate clean matrix. The LCS is processed through the entire method procedure in the same manner as samples.
Matrix Spike (MS)	The MS is a known amount of a target analyte added to a sample. The MS is processed through the entire method procedure in the same manner as samples.
Method Blank (MB)	The MB is an aliquot of deionized water or other appropriate clean matrix that is thought to be free of the analyte in question. The MB is processed through the entire extraction or analysis procedure and is used to indicate contamination in the lab.
Method Detection Limit (MDL)	The MDL is the lowest level of detection of which a method is capable.
Practical Quantitation Limit (PQL)	The PQL is the lowest value at which Transwest Geochem can detect an analyte in matrix with a high degree of confidence. The PQL will increase as the DF increases. The PQL is greater than or equal to the MDL.
Relative Percent Difference (RPD)	The RPD is a measure of precision (the ability to obtain the same result on re-analysis of the same sample). It is calculated using the result of a sample, MS, LCS, or LCSV and its associated duplicate result.
Secondary Source QC Sample (LCSV)	The LCSV is also referred to as a second source laboratory control sample. It is the same type of standard as a calibration or spiking standard but is obtained from a different source. The LCSV is an indication of the primary standard quality, method performance, and instrument performance.
Surrogate	A surrogate compound is similar to the organic compound of interest in terms of chemical composition but is unique in that it is rare in the environment. When surrogates are used, they are added to every sample, blank and standard. Surrogate recovery is used as an indication of extraction and/or analytical success.
Trip Blank (TB)	The TB is a portion of deionized water preserved in the same manner as the samples. The TB travels from the lab, to the field, and then back to the lab with the samples from the field. The TB serves as an indication of contamination introduced during sample transportation.

TRANSWEST GEOCHEM

Date Printed: 26-Jun-07
License No. AZM133/AZ0133

CLIENT:	Environmental & Engineering Consultants, I
Project Name:	35 E Toole Ave
Project Number:	206100
Work Order:	0706280
Date Received:	14-Jun-07

References

Transwest Geochem, Inc. uses the methods outlined in the following references:

Code of Federal Regulations, 40CFR, Part 136, Appendix A, July 2005.

Standard Methods for the Examination of Water and Wastewater, 20th Edition, 1998.

Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Revised March 1983.

Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, Revised August 1993.

Methods for the Determination of Metals in Environmental Samples, Supplement 1: EPA/600/R-94/111, Revised May 1994.

Methods for the Determination of Organic Compounds in Drinking Water, EPA/600/4-88/039, Revised July, 1991; EPA-600/4-90/020, Supplement I, July 1990; EPA-600/R-92/129; Supplement II, August 1992; EPA-600/R-95/131, Supplement III, August 1995.

Hach, Water Analysis Handbook, 3rd Edition, 1997.

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition, 1986 including Update I, July 1992; Update IIA, August 1993; Update II; September 1994; Update IIB, January 1995; Update III, December 1996. Update IIIA, June 1999; and Update IIIB July 2005.

Bureau of Laboratory Services, State of Arizona Department of Health Services Method 8015AZ.R1, September 1998. (Comment: C6-C10 GRO reported by this method is not to be used in compliance situations)

ASTM MethodD4982, Annual Book of ASTM Standards, Volumes 11.01 and 11.02, 1995

The Determination of Polychlorinated Biphenyls in Transformer Fluid and Waste Oils, EPA-600 4-81-045, September 1982.

EPA Method 9013A, Cyanide Extraction Procedure for Solids and Oils. (Rev, 1 November 2004)

EPA Method 5035A, Closed-System Purge-and-Trap and Extraction for Volatile Organics in Soil and Waste Samples (draft rev. 1 July 2002)

EPA Method 5030C, Purge-and-Trap for Aqueous Samples (rev.3 May 2003)

Office of Ground Water and Drinking Water Technical Support Center, EPA 815-R-05-004, Manual for Certification of Drinking Water, (5th Edition January 2005)

TRANSWEST GEOCHEM

Date Printed 26-Jun-07

License No. AZM133/AZ0133

CLIENT: Environmental & Engineering Consultants,
Work Order: 0706280
Lab ID: 0706280-01
Project Name: 35 E Toole Ave
Project Number: 206100

Client Sample ID: Dup 1
Collection Date: 6/14/2007
Matrix: Soil

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
C6-C10 GRO	<20	20		mg/Kg	1.0	8015AZ	6/18/07	6/18/07 22:56	MJB	13924
C10-C22 DRO	<30	30		mg/Kg	1.0	8015AZ	6/18/07	6/18/07 22:56	MJB	13924
C22-C32 ORO	<100	100		mg/Kg	1.0	8015AZ	6/18/07	6/18/07 22:56	MJB	13924
C10-C32 SRL	<130	130		mg/Kg	1.0	8015AZ	6/18/07	6/18/07 22:56	MJB	13924
o-Terphenyl(Surrogate)	98	70-130		%REC	1.0	8015AZ	6/18/07	6/18/07 22:56	MJB	13924
Acetone	<1.5	1.5		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 2:43	BSP	GCMS_T_070618A
Benzene	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 2:43	BSP	GCMS_T_070618A
Bromobenzene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 2:43	BSP	GCMS_T_070618A
Bromochloromethane	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 2:43	BSP	GCMS_T_070618A
Bromodichloromethane	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 2:43	BSP	GCMS_T_070618A
Bromoform	<0.10	0.10		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 2:43	BSP	GCMS_T_070618A
Bromomethane	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 2:43	BSP	GCMS_T_070618A
2-Butanone	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 2:43	BSP	GCMS_T_070618A
n-Butylbenzene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 2:43	BSP	GCMS_T_070618A
sec-Butylbenzene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 2:43	BSP	GCMS_T_070618A
tert-Butylbenzene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 2:43	BSP	GCMS_T_070618A
Carbon disulfide	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 2:43	BSP	GCMS_T_070618A
Carbon tetrachloride	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 2:43	BSP	GCMS_T_070618A
Chlorobenzene	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 2:43	BSP	GCMS_T_070618A
Dibromochloromethane	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 2:43	BSP	GCMS_T_070618A
Chloroethane	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 2:43	BSP	GCMS_T_070618A
Chloroform	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 2:43	BSP	GCMS_T_070618A
Chloromethane	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 2:43	BSP	GCMS_T_070618A
2-Chlorotoluene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 2:43	BSP	GCMS_T_070618A
4-Chlorotoluene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 2:43	BSP	GCMS_T_070618A
1,2-Dibromo-3-chloropropane	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 2:43	BSP	GCMS_T_070618A
1,2-Dibromoethane	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 2:43	BSP	GCMS_T_070618A
Dibromomethane	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 2:43	BSP	GCMS_T_070618A
1,2-Dichlorobenzene	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 2:43	BSP	GCMS_T_070618A
1,3-Dichlorobenzene	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 2:43	BSP	GCMS_T_070618A
1,4-Dichlorobenzene	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 2:43	BSP	GCMS_T_070618A
Dichlorodifluoromethane	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 2:43	BSP	GCMS_T_070618A
1,1-Dichloroethane	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 2:43	BSP	GCMS_T_070618A
1,2-Dichloroethane	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 2:43	BSP	GCMS_T_070618A
1,1-Dichloroethene	<0.10	0.10		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 2:43	BSP	GCMS_T_070618A
cis-1,2-Dichloroethene	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 2:43	BSP	GCMS_T_070618A
trans-1,2-Dichloroethene	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 2:43	BSP	GCMS_T_070618A
1,2-Dichloropropane	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 2:43	BSP	GCMS_T_070618A
1,3-Dichloropropane	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 2:43	BSP	GCMS_T_070618A

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Date Printed 26-Jun-07

License No. AZM133/AZ0133

CLIENT: Environmental & Engineering Consultants,
Work Order: 0706280
Lab ID: 0706280-01
Project Name: 35 E Toole Ave
Project Number: 206100

Client Sample ID: Dup 1
Collection Date: 6/14/2007
Matrix: Soil

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
2,2-Dichloropropane	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 2:43	BSP	GCMS_T_070618A
1,1-Dichloropropene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 2:43	BSP	GCMS_T_070618A
cis-1,3-Dichloropropene	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 2:43	BSP	GCMS_T_070618A
trans-1,3-Dichloropropene	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 2:43	BSP	GCMS_T_070618A
Ethylbenzene	<0.10	0.10		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 2:43	BSP	GCMS_T_070618A
Hexachlorobutadiene	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 2:43	BSP	GCMS_T_070618A
2-Hexanone	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 2:43	BSP	GCMS_T_070618A
Iodomethane	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 2:43	BSP	GCMS_T_070618A
Isopropylbenzene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 2:43	BSP	GCMS_T_070618A
4-Isopropyltoluene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 2:43	BSP	GCMS_T_070618A
Methylene chloride	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 2:43	BSP	GCMS_T_070618A
4-Methyl-2-pentanone	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 2:43	BSP	GCMS_T_070618A
Methyl tert-butyl ether	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 2:43	BSP	GCMS_T_070618A
Naphthalene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 2:43	BSP	GCMS_T_070618A
n-Propylbenzene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 2:43	BSP	GCMS_T_070618A
Styrene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 2:43	BSP	GCMS_T_070618A
1,1,1,2-Tetrachloroethane	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 2:43	BSP	GCMS_T_070618A
1,1,2,2-Tetrachloroethane	<0.10	0.10		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 2:43	BSP	GCMS_T_070618A
Tetrachloroethene	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 2:43	BSP	GCMS_T_070618A
Toluene	<0.10	0.10		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 2:43	BSP	GCMS_T_070618A
1,2,3-Trichlorobenzene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 2:43	BSP	GCMS_T_070618A
1,2,4-Trichlorobenzene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 2:43	BSP	GCMS_T_070618A
1,1,1-Trichloroethane	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 2:43	BSP	GCMS_T_070618A
1,1,2-Trichloroethane	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 2:43	BSP	GCMS_T_070618A
Trichloroethene	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 2:43	BSP	GCMS_T_070618A
Trichlorofluoromethane	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 2:43	BSP	GCMS_T_070618A
1,2,3-Trichloropropane	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 2:43	BSP	GCMS_T_070618A
1,2,4-Trimethylbenzene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 2:43	BSP	GCMS_T_070618A
1,3,5-Trimethylbenzene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 2:43	BSP	GCMS_T_070618A
Vinyl acetate	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 2:43	BSP	GCMS_T_070618A
Vinyl chloride	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 2:43	BSP	GCMS_T_070618A
Xylenes, Total	<0.15	0.15		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 2:43	BSP	GCMS_T_070618A
4-Bromofluorobenzene(Surrogate)	83	59-131		%REC	1.0	SW8260B	6/15/07	6/19/07 2:43	BSP	GCMS_T_070618A
1,2-Dichloroethane-d4(Surrogate)	98	63-123		%REC	1.0	SW8260B	6/15/07	6/19/07 2:43	BSP	GCMS_T_070618A
Dibromofluoromethane(Surrogate)	98	63-123		%REC	1.0	SW8260B	6/15/07	6/19/07 2:43	BSP	GCMS_T_070618A
Toluene-d8(Surrogate)	89	64-120		%REC	1.0	SW8260B	6/15/07	6/19/07 2:43	BSP	GCMS_T_070618A

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Date Printed 26-Jun-07

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CLIENT: Environmental & Engineering Consultants,
Work Order: 0706280
Lab ID: 0706280-02
Project Name: 35 E Toole Ave
Project Number: 206100

Client Sample ID: CB-4-10'
Collection Date: 6/14/2007 7:45:00 AM
Matrix: Soil

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
C6-C10 GRO	<20	20		mg/Kg	1.0	8015AZ	6/18/07	6/18/07 23:41	MJB	13924
C10-C22 DRO	<30	30		mg/Kg	1.0	8015AZ	6/18/07	6/18/07 23:41	MJB	13924
C22-C32 ORO	<100	100		mg/Kg	1.0	8015AZ	6/18/07	6/18/07 23:41	MJB	13924
C10-C32 SRL	<130	130		mg/Kg	1.0	8015AZ	6/18/07	6/18/07 23:41	MJB	13924
o-Terphenyl(Surrogate)	98	70-130		%REC	1.0	8015AZ	6/18/07	6/18/07 23:41	MJB	13924
Acenaphthene	<0.40	0.40	L2	mg/Kg	1.0	EPA 8310	6/18/07	6/20/07 19:21	NC	13934
Acenaphthylene	<0.40	0.40	L2	mg/Kg	1.0	EPA 8310	6/18/07	6/20/07 19:21	NC	13934
Anthracene	<0.040	0.040		mg/Kg	1.0	EPA 8310	6/18/07	6/20/07 19:21	NC	13934
Benz[a]anthracene	<0.040	0.040	L2	mg/Kg	1.0	EPA 8310	6/18/07	6/20/07 19:21	NC	13934
Benzo[a]pyrene	<0.010	0.010	V1	mg/Kg	1.0	EPA 8310	6/18/07	6/20/07 19:21	NC	13934
Benzo[b]fluoranthene	<0.040	0.040	L2	mg/Kg	1.0	EPA 8310	6/18/07	6/20/07 19:21	NC	13934
Benzo[g,h,i]perylene	<0.040	0.040	L2	mg/Kg	1.0	EPA 8310	6/18/07	6/20/07 19:21	NC	13934
Benzo[k]fluoranthene	<0.040	0.040	L2	mg/Kg	1.0	EPA 8310	6/18/07	6/20/07 19:21	NC	13934
Chrysene	<0.040	0.040	L2	mg/Kg	1.0	EPA 8310	6/18/07	6/20/07 19:21	NC	13934
Dibenz[a,h]anthracene	<0.040	0.040	L2	mg/Kg	1.0	EPA 8310	6/18/07	6/20/07 19:21	NC	13934
Fluoranthene	<0.040	0.040	L2	mg/Kg	1.0	EPA 8310	6/18/07	6/20/07 19:21	NC	13934
Fluorene	<0.040	0.040	L2	mg/Kg	1.0	EPA 8310	6/18/07	6/20/07 19:21	NC	13934
Indeno[1,2,3-cd]pyrene	<0.020	0.020	L2	mg/Kg	1.0	EPA 8310	6/18/07	6/20/07 19:21	NC	13934
Naphthalene	<0.10	0.10	L2	mg/Kg	1.0	EPA 8310	6/18/07	6/20/07 19:21	NC	13934
Phenanthrene	<0.080	0.080	L2	mg/Kg	1.0	EPA 8310	6/18/07	6/20/07 19:21	NC	13934
Pyrene	<0.040	0.040	L2	mg/Kg	1.0	EPA 8310	6/18/07	6/20/07 19:21	NC	13934
2-Chloroanthracene(Surrogate)	70	51-125		%REC	1.0	EPA 8310	6/18/07	6/20/07 19:21	NC	13934
Acetone	<1.5	1.5		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 3:26	BSP	GCMS_T_070618A
Benzene	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 3:26	BSP	GCMS_T_070618A
Bromobenzene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 3:26	BSP	GCMS_T_070618A
Bromochloromethane	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 3:26	BSP	GCMS_T_070618A
Bromodichloromethane	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 3:26	BSP	GCMS_T_070618A
Bromoform	<0.10	0.10		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 3:26	BSP	GCMS_T_070618A
Bromomethane	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 3:26	BSP	GCMS_T_070618A
2-Butanone	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 3:26	BSP	GCMS_T_070618A
n-Butylbenzene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 3:26	BSP	GCMS_T_070618A
sec-Butylbenzene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 3:26	BSP	GCMS_T_070618A
tert-Butylbenzene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 3:26	BSP	GCMS_T_070618A
Carbon disulfide	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 3:26	BSP	GCMS_T_070618A
Carbon tetrachloride	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 3:26	BSP	GCMS_T_070618A
Chlorobenzene	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 3:26	BSP	GCMS_T_070618A
Dibromochloromethane	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 3:26	BSP	GCMS_T_070618A
Chloroethane	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 3:26	BSP	GCMS_T_070618A

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Date Printed 26-Jun-07

License No. AZM133/AZ0133

CLIENT: Environmental & Engineering Consultants,
Work Order: 0706280
Lab ID: 0706280-02
Project Name: 35 E Toole Ave
Project Number: 206100

Client Sample ID: CB-4-10'
Collection Date: 6/14/2007 7:45:00 AM
Matrix: Soil

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Chloroform	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 3:26	BSP	GCMS_T_070618A
Chloromethane	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 3:26	BSP	GCMS_T_070618A
2-Chlorotoluene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 3:26	BSP	GCMS_T_070618A
4-Chlorotoluene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 3:26	BSP	GCMS_T_070618A
1,2-Dibromo-3-chloropropane	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 3:26	BSP	GCMS_T_070618A
1,2-Dibromoethane	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 3:26	BSP	GCMS_T_070618A
Dibromomethane	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 3:26	BSP	GCMS_T_070618A
1,2-Dichlorobenzene	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 3:26	BSP	GCMS_T_070618A
1,3-Dichlorobenzene	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 3:26	BSP	GCMS_T_070618A
1,4-Dichlorobenzene	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 3:26	BSP	GCMS_T_070618A
Dichlorodifluoromethane	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 3:26	BSP	GCMS_T_070618A
1,1-Dichloroethane	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 3:26	BSP	GCMS_T_070618A
1,2-Dichloroethane	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 3:26	BSP	GCMS_T_070618A
1,1-Dichloroethene	<0.10	0.10		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 3:26	BSP	GCMS_T_070618A
cis-1,2-Dichloroethene	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 3:26	BSP	GCMS_T_070618A
trans-1,2-Dichloroethene	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 3:26	BSP	GCMS_T_070618A
1,2-Dichloropropane	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 3:26	BSP	GCMS_T_070618A
1,3-Dichloropropane	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 3:26	BSP	GCMS_T_070618A
2,2-Dichloropropane	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 3:26	BSP	GCMS_T_070618A
1,1-Dichloropropene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 3:26	BSP	GCMS_T_070618A
cis-1,3-Dichloropropene	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 3:26	BSP	GCMS_T_070618A
trans-1,3-Dichloropropene	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 3:26	BSP	GCMS_T_070618A
Ethylbenzene	<0.10	0.10		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 3:26	BSP	GCMS_T_070618A
Hexachlorobutadiene	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 3:26	BSP	GCMS_T_070618A
2-Hexanone	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 3:26	BSP	GCMS_T_070618A
Iodomethane	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 3:26	BSP	GCMS_T_070618A
Isopropylbenzene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 3:26	BSP	GCMS_T_070618A
4-Isopropyltoluene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 3:26	BSP	GCMS_T_070618A
Methylene chloride	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 3:26	BSP	GCMS_T_070618A
4-Methyl-2-pentanone	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 3:26	BSP	GCMS_T_070618A
Methyl tert-butyl ether	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 3:26	BSP	GCMS_T_070618A
Naphthalene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 3:26	BSP	GCMS_T_070618A
n-Propylbenzene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 3:26	BSP	GCMS_T_070618A
Styrene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 3:26	BSP	GCMS_T_070618A
1,1,1,2-Tetrachloroethane	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 3:26	BSP	GCMS_T_070618A
1,1,2,2-Tetrachloroethane	<0.10	0.10		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 3:26	BSP	GCMS_T_070618A
Tetrachloroethene	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 3:26	BSP	GCMS_T_070618A
Toluene	<0.10	0.10		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 3:26	BSP	GCMS_T_070618A
1,2,3-Trichlorobenzene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 3:26	BSP	GCMS_T_070618A
1,2,4-Trichlorobenzene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 3:26	BSP	GCMS_T_070618A
1,1,1-Trichloroethane	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 3:26	BSP	GCMS_T_070618A

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Date Printed 26-Jun-07

License No. AZM133/AZ0133

CLIENT: Environmental & Engineering Consultants,
Work Order: 0706280
Lab ID: 0706280-02
Project Name: 35 E Toole Ave
Project Number: 206100

Client Sample ID: CB-4-10'
Collection Date: 6/14/2007 7:45:00 AM
Matrix: Soil

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
1,1,2-Trichloroethane	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 3:26	BSP	GCMS_T_070618A
Trichloroethene	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 3:26	BSP	GCMS_T_070618A
Trichlorofluoromethane	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 3:26	BSP	GCMS_T_070618A
1,2,3-Trichloropropane	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 3:26	BSP	GCMS_T_070618A
1,2,4-Trimethylbenzene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 3:26	BSP	GCMS_T_070618A
1,3,5-Trimethylbenzene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 3:26	BSP	GCMS_T_070618A
Vinyl acetate	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 3:26	BSP	GCMS_T_070618A
Vinyl chloride	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 3:26	BSP	GCMS_T_070618A
Xylenes, Total	<0.15	0.15		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 3:26	BSP	GCMS_T_070618A
4-Bromofluorobenzene(Surrogate)	88	59-131		%REC	1.0	SW8260B	6/15/07	6/19/07 3:26	BSP	GCMS_T_070618A
1,2-Dichloroethane-d4(Surrogate)	106	63-123		%REC	1.0	SW8260B	6/15/07	6/19/07 3:26	BSP	GCMS_T_070618A
Dibromofluoromethane(Surrogate)	102	63-123		%REC	1.0	SW8260B	6/15/07	6/19/07 3:26	BSP	GCMS_T_070618A
Toluene-d8(Surrogate)	94	64-120		%REC	1.0	SW8260B	6/15/07	6/19/07 3:26	BSP	GCMS_T_070618A

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Date Printed 26-Jun-07

License No. AZM133/AZ0133

CLIENT: Environmental & Engineering Consultants,
Work Order: 0706280
Lab ID: 0706280-03
Project Name: 35 E Toole Ave
Project Number: 206100

Client Sample ID: CB-4-20'
Collection Date: 6/14/2007 8:00:00 AM
Matrix: Soil

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
C6-C10 GRO	<400	400	D1	mg/Kg	20	8015AZ	6/18/07	6/19/07 0:26	MJB	13924
C10-C22 DRO	**2400**	600	D1	mg/Kg	20	8015AZ	6/18/07	6/19/07 0:26	MJB	13924
C22-C32 ORO	**3100**	2000	D1	mg/Kg	20	8015AZ	6/18/07	6/19/07 0:26	MJB	13924
C10-C32 SRL	**5500**	2600	D2	mg/Kg	20	8015AZ	6/18/07	6/19/07 0:26	MJB	13924
o-Terphenyl(Surrogate)	0	70-130	S8	%REC	20	8015AZ	6/18/07	6/19/07 0:26	MJB	13924
Acetone	<1.5	1.5		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 20:12	BSP	GCMS_T_070618A
Benzene	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 20:12	BSP	GCMS_T_070618A
Bromobenzene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 20:12	BSP	GCMS_T_070618A
Bromochloromethane	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 20:12	BSP	GCMS_T_070618A
Bromodichloromethane	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 20:12	BSP	GCMS_T_070618A
Bromoform	<0.10	0.10		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 20:12	BSP	GCMS_T_070618A
Bromomethane	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 20:12	BSP	GCMS_T_070618A
2-Butanone	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 20:12	BSP	GCMS_T_070618A
n-Butylbenzene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 20:12	BSP	GCMS_T_070618A
sec-Butylbenzene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 20:12	BSP	GCMS_T_070618A
tert-Butylbenzene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 20:12	BSP	GCMS_T_070618A
Carbon disulfide	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 20:12	BSP	GCMS_T_070618A
Carbon tetrachloride	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 20:12	BSP	GCMS_T_070618A
Chlorobenzene	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 20:12	BSP	GCMS_T_070618A
Dibromochloromethane	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 20:12	BSP	GCMS_T_070618A
Chloroethane	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 20:12	BSP	GCMS_T_070618A
Chloroform	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 20:12	BSP	GCMS_T_070618A
Chloromethane	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 20:12	BSP	GCMS_T_070618A
2-Chlorotoluene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 20:12	BSP	GCMS_T_070618A
4-Chlorotoluene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 20:12	BSP	GCMS_T_070618A
1,2-Dibromo-3-chloropropane	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 20:12	BSP	GCMS_T_070618A
1,2-Dibromoethane	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 20:12	BSP	GCMS_T_070618A
Dibromomethane	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 20:12	BSP	GCMS_T_070618A
1,2-Dichlorobenzene	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 20:12	BSP	GCMS_T_070618A
1,3-Dichlorobenzene	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 20:12	BSP	GCMS_T_070618A
1,4-Dichlorobenzene	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 20:12	BSP	GCMS_T_070618A
Dichlorodifluoromethane	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 20:12	BSP	GCMS_T_070618A
1,1-Dichloroethane	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 20:12	BSP	GCMS_T_070618A
1,2-Dichloroethane	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 20:12	BSP	GCMS_T_070618A
1,1-Dichloroethene	<0.10	0.10		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 20:12	BSP	GCMS_T_070618A
cis-1,2-Dichloroethene	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 20:12	BSP	GCMS_T_070618A
trans-1,2-Dichloroethene	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 20:12	BSP	GCMS_T_070618A
1,2-Dichloropropane	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 20:12	BSP	GCMS_T_070618A
1,3-Dichloropropane	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 20:12	BSP	GCMS_T_070618A

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CLIENT: Environmental & Engineering Consultants,
Work Order: 0706280
Lab ID: 0706280-03
Project Name: 35 E Toole Ave
Project Number: 206100

Client Sample ID: CB-4-20'
Collection Date: 6/14/2007 8:00:00 AM
Matrix: Soil

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
2,2-Dichloropropane	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 20:12	BSP	GCMS_T_070618A
1,1-Dichloropropene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 20:12	BSP	GCMS_T_070618A
cis-1,3-Dichloropropene	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 20:12	BSP	GCMS_T_070618A
trans-1,3-Dichloropropene	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 20:12	BSP	GCMS_T_070618A
Ethylbenzene	<0.10	0.10		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 20:12	BSP	GCMS_T_070618A
Hexachlorobutadiene	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 20:12	BSP	GCMS_T_070618A
2-Hexanone	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 20:12	BSP	GCMS_T_070618A
Iodomethane	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 20:12	BSP	GCMS_T_070618A
Isopropylbenzene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 20:12	BSP	GCMS_T_070618A
4-Isopropyltoluene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 20:12	BSP	GCMS_T_070618A
Methylene chloride	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 20:12	BSP	GCMS_T_070618A
4-Methyl-2-pentanone	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 20:12	BSP	GCMS_T_070618A
Methyl tert-butyl ether	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 20:12	BSP	GCMS_T_070618A
Naphthalene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 20:12	BSP	GCMS_T_070618A
n-Propylbenzene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 20:12	BSP	GCMS_T_070618A
Styrene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 20:12	BSP	GCMS_T_070618A
1,1,1,2-Tetrachloroethane	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 20:12	BSP	GCMS_T_070618A
1,1,2,2-Tetrachloroethane	<0.10	0.10		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 20:12	BSP	GCMS_T_070618A
Tetrachloroethene	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 20:12	BSP	GCMS_T_070618A
Toluene	<0.10	0.10		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 20:12	BSP	GCMS_T_070618A
1,2,3-Trichlorobenzene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 20:12	BSP	GCMS_T_070618A
1,2,4-Trichlorobenzene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 20:12	BSP	GCMS_T_070618A
1,1,1-Trichloroethane	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 20:12	BSP	GCMS_T_070618A
1,1,2-Trichloroethane	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 20:12	BSP	GCMS_T_070618A
Trichloroethene	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 20:12	BSP	GCMS_T_070618A
Trichlorofluoromethane	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 20:12	BSP	GCMS_T_070618A
1,2,3-Trichloropropane	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 20:12	BSP	GCMS_T_070618A
1,2,4-Trimethylbenzene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 20:12	BSP	GCMS_T_070618A
1,3,5-Trimethylbenzene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 20:12	BSP	GCMS_T_070618A
Vinyl acetate	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 20:12	BSP	GCMS_T_070618A
Vinyl chloride	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 20:12	BSP	GCMS_T_070618A
Xylenes, Total	<0.15	0.15		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 20:12	BSP	GCMS_T_070618A
4-Bromofluorobenzene(Surrogate)	84	59-131		%REC	1.0	SW8260B	6/15/07	6/19/07 20:12	BSP	GCMS_T_070618A
1,2-Dichloroethane-d4(Surrogate)	99	63-123		%REC	1.0	SW8260B	6/15/07	6/19/07 20:12	BSP	GCMS_T_070618A
Dibromofluoromethane(Surrogate)	99	63-123		%REC	1.0	SW8260B	6/15/07	6/19/07 20:12	BSP	GCMS_T_070618A
Toluene-d8(Surrogate)	91	64-120		%REC	1.0	SW8260B	6/15/07	6/19/07 20:12	BSP	GCMS_T_070618A

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CLIENT: Environmental & Engineering Consultants,
Work Order: 0706280
Lab ID: 0706280-04
Project Name: 35 E Toole Ave
Project Number: 206100

Client Sample ID: CB-4-40'
Collection Date: 6/14/2007 9:32:00 AM
Matrix: Soil

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
C6-C10 GRO	<20	20		mg/Kg	1.0	8015AZ	6/18/07	6/19/07 1:11	MJB	13924
C10-C22 DRO	<30	30		mg/Kg	1.0	8015AZ	6/18/07	6/19/07 1:11	MJB	13924
C22-C32 ORO	<100	100		mg/Kg	1.0	8015AZ	6/18/07	6/19/07 1:11	MJB	13924
C10-C32 SRL	<130	130		mg/Kg	1.0	8015AZ	6/18/07	6/19/07 1:11	MJB	13924
o-Terphenyl(Surrogate)	97	70-130		%REC	1.0	8015AZ	6/18/07	6/19/07 1:11	MJB	13924
Acetone	<1.5	1.5		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 4:55	BSP	GCMS_T_070618A
Benzene	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 4:55	BSP	GCMS_T_070618A
Bromobenzene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 4:55	BSP	GCMS_T_070618A
Bromochloromethane	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 4:55	BSP	GCMS_T_070618A
Bromodichloromethane	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 4:55	BSP	GCMS_T_070618A
Bromoform	<0.10	0.10		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 4:55	BSP	GCMS_T_070618A
Bromomethane	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 4:55	BSP	GCMS_T_070618A
2-Butanone	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 4:55	BSP	GCMS_T_070618A
n-Butylbenzene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 4:55	BSP	GCMS_T_070618A
sec-Butylbenzene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 4:55	BSP	GCMS_T_070618A
tert-Butylbenzene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 4:55	BSP	GCMS_T_070618A
Carbon disulfide	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 4:55	BSP	GCMS_T_070618A
Carbon tetrachloride	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 4:55	BSP	GCMS_T_070618A
Chlorobenzene	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 4:55	BSP	GCMS_T_070618A
Dibromochloromethane	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 4:55	BSP	GCMS_T_070618A
Chloroethane	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 4:55	BSP	GCMS_T_070618A
Chloroform	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 4:55	BSP	GCMS_T_070618A
Chloromethane	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 4:55	BSP	GCMS_T_070618A
2-Chlorotoluene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 4:55	BSP	GCMS_T_070618A
4-Chlorotoluene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 4:55	BSP	GCMS_T_070618A
1,2-Dibromo-3-chloropropane	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 4:55	BSP	GCMS_T_070618A
1,2-Dibromoethane	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 4:55	BSP	GCMS_T_070618A
Dibromomethane	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 4:55	BSP	GCMS_T_070618A
1,2-Dichlorobenzene	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 4:55	BSP	GCMS_T_070618A
1,3-Dichlorobenzene	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 4:55	BSP	GCMS_T_070618A
1,4-Dichlorobenzene	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 4:55	BSP	GCMS_T_070618A
Dichlorodifluoromethane	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 4:55	BSP	GCMS_T_070618A
1,1-Dichloroethane	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 4:55	BSP	GCMS_T_070618A
1,2-Dichloroethane	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 4:55	BSP	GCMS_T_070618A
1,1-Dichloroethene	<0.10	0.10		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 4:55	BSP	GCMS_T_070618A
cis-1,2-Dichloroethene	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 4:55	BSP	GCMS_T_070618A
trans-1,2-Dichloroethene	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 4:55	BSP	GCMS_T_070618A
1,2-Dichloropropane	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 4:55	BSP	GCMS_T_070618A
1,3-Dichloropropane	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 4:55	BSP	GCMS_T_070618A

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Date Printed 26-Jun-07

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CLIENT: Environmental & Engineering Consultants,
Work Order: 0706280
Lab ID: 0706280-04
Project Name: 35 E Toole Ave
Project Number: 206100

Client Sample ID: CB-4-40'
Collection Date: 6/14/2007 9:32:00 AM
Matrix: Soil

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
2,2-Dichloropropane	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 4:55	BSP	GCMS_T_070618A
1,1-Dichloropropene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 4:55	BSP	GCMS_T_070618A
cis-1,3-Dichloropropene	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 4:55	BSP	GCMS_T_070618A
trans-1,3-Dichloropropene	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 4:55	BSP	GCMS_T_070618A
Ethylbenzene	<0.10	0.10		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 4:55	BSP	GCMS_T_070618A
Hexachlorobutadiene	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 4:55	BSP	GCMS_T_070618A
2-Hexanone	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 4:55	BSP	GCMS_T_070618A
Iodomethane	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 4:55	BSP	GCMS_T_070618A
Isopropylbenzene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 4:55	BSP	GCMS_T_070618A
4-Isopropyltoluene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 4:55	BSP	GCMS_T_070618A
Methylene chloride	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 4:55	BSP	GCMS_T_070618A
4-Methyl-2-pentanone	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 4:55	BSP	GCMS_T_070618A
Methyl tert-butyl ether	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 4:55	BSP	GCMS_T_070618A
Naphthalene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 4:55	BSP	GCMS_T_070618A
n-Propylbenzene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 4:55	BSP	GCMS_T_070618A
Styrene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 4:55	BSP	GCMS_T_070618A
1,1,1,2-Tetrachloroethane	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 4:55	BSP	GCMS_T_070618A
1,1,2,2-Tetrachloroethane	<0.10	0.10		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 4:55	BSP	GCMS_T_070618A
Tetrachloroethene	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 4:55	BSP	GCMS_T_070618A
Toluene	<0.10	0.10		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 4:55	BSP	GCMS_T_070618A
1,2,3-Trichlorobenzene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 4:55	BSP	GCMS_T_070618A
1,2,4-Trichlorobenzene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 4:55	BSP	GCMS_T_070618A
1,1,1-Trichloroethane	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 4:55	BSP	GCMS_T_070618A
1,1,2-Trichloroethane	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 4:55	BSP	GCMS_T_070618A
Trichloroethene	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 4:55	BSP	GCMS_T_070618A
Trichlorofluoromethane	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 4:55	BSP	GCMS_T_070618A
1,2,3-Trichloropropane	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 4:55	BSP	GCMS_T_070618A
1,2,4-Trimethylbenzene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 4:55	BSP	GCMS_T_070618A
1,3,5-Trimethylbenzene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 4:55	BSP	GCMS_T_070618A
Vinyl acetate	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 4:55	BSP	GCMS_T_070618A
Vinyl chloride	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 4:55	BSP	GCMS_T_070618A
Xylenes, Total	<0.15	0.15		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 4:55	BSP	GCMS_T_070618A
4-Bromofluorobenzene(Surrogate)	78	59-131		%REC	1.0	SW8260B	6/15/07	6/19/07 4:55	BSP	GCMS_T_070618A
1,2-Dichloroethane-d4(Surrogate)	94	63-123		%REC	1.0	SW8260B	6/15/07	6/19/07 4:55	BSP	GCMS_T_070618A
Dibromofluoromethane(Surrogate)	92	63-123		%REC	1.0	SW8260B	6/15/07	6/19/07 4:55	BSP	GCMS_T_070618A
Toluene-d8(Surrogate)	85	64-120		%REC	1.0	SW8260B	6/15/07	6/19/07 4:55	BSP	GCMS_T_070618A

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Date Printed 26-Jun-07

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CLIENT: Environmental & Engineering Consultants,
Work Order: 0706280
Lab ID: 0706280-05
Project Name: 35 E Toole Ave
Project Number: 206100

Client Sample ID: CB-4-50'
Collection Date: 6/14/2007 10:10:00 AM
Matrix: Soil

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
C6-C10 GRO	<20	20		mg/Kg	1.0	8015AZ	6/18/07	6/19/07 1:55	MJB	13924
C10-C22 DRO	<30	30		mg/Kg	1.0	8015AZ	6/18/07	6/19/07 1:55	MJB	13924
C22-C32 ORO	<100	100		mg/Kg	1.0	8015AZ	6/18/07	6/19/07 1:55	MJB	13924
C10-C32 SRL	<130	130		mg/Kg	1.0	8015AZ	6/18/07	6/19/07 1:55	MJB	13924
o-Terphenyl(Surrogate)	99	70-130		%REC	1.0	8015AZ	6/18/07	6/19/07 1:55	MJB	13924
Acetone	<1.5	1.5		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 5:38	BSP	GCMS_T_070618A
Benzene	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 5:38	BSP	GCMS_T_070618A
Bromobenzene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 5:38	BSP	GCMS_T_070618A
Bromochloromethane	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 5:38	BSP	GCMS_T_070618A
Bromodichloromethane	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 5:38	BSP	GCMS_T_070618A
Bromoform	<0.10	0.10		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 5:38	BSP	GCMS_T_070618A
Bromomethane	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 5:38	BSP	GCMS_T_070618A
2-Butanone	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 5:38	BSP	GCMS_T_070618A
n-Butylbenzene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 5:38	BSP	GCMS_T_070618A
sec-Butylbenzene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 5:38	BSP	GCMS_T_070618A
tert-Butylbenzene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 5:38	BSP	GCMS_T_070618A
Carbon disulfide	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 5:38	BSP	GCMS_T_070618A
Carbon tetrachloride	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 5:38	BSP	GCMS_T_070618A
Chlorobenzene	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 5:38	BSP	GCMS_T_070618A
Dibromochloromethane	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 5:38	BSP	GCMS_T_070618A
Chloroethane	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 5:38	BSP	GCMS_T_070618A
Chloroform	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 5:38	BSP	GCMS_T_070618A
Chloromethane	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 5:38	BSP	GCMS_T_070618A
2-Chlorotoluene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 5:38	BSP	GCMS_T_070618A
4-Chlorotoluene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 5:38	BSP	GCMS_T_070618A
1,2-Dibromo-3-chloropropane	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 5:38	BSP	GCMS_T_070618A
1,2-Dibromoethane	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 5:38	BSP	GCMS_T_070618A
Dibromomethane	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 5:38	BSP	GCMS_T_070618A
1,2-Dichlorobenzene	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 5:38	BSP	GCMS_T_070618A
1,3-Dichlorobenzene	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 5:38	BSP	GCMS_T_070618A
1,4-Dichlorobenzene	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 5:38	BSP	GCMS_T_070618A
Dichlorodifluoromethane	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 5:38	BSP	GCMS_T_070618A
1,1-Dichloroethane	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 5:38	BSP	GCMS_T_070618A
1,2-Dichloroethane	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 5:38	BSP	GCMS_T_070618A
1,1-Dichloroethene	<0.10	0.10		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 5:38	BSP	GCMS_T_070618A
cis-1,2-Dichloroethene	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 5:38	BSP	GCMS_T_070618A
trans-1,2-Dichloroethene	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 5:38	BSP	GCMS_T_070618A
1,2-Dichloropropane	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 5:38	BSP	GCMS_T_070618A
1,3-Dichloropropane	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 5:38	BSP	GCMS_T_070618A

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Date Printed 26-Jun-07

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CLIENT: Environmental & Engineering Consultants,
Work Order: 0706280
Lab ID: 0706280-05
Project Name: 35 E Toole Ave
Project Number: 206100

Client Sample ID: CB-4-50'
Collection Date: 6/14/2007 10:10:00 AM
Matrix: Soil

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
2,2-Dichloropropane	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 5:38	BSP	GCMS_T_070618A
1,1-Dichloropropene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 5:38	BSP	GCMS_T_070618A
cis-1,3-Dichloropropene	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 5:38	BSP	GCMS_T_070618A
trans-1,3-Dichloropropene	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 5:38	BSP	GCMS_T_070618A
Ethylbenzene	<0.10	0.10		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 5:38	BSP	GCMS_T_070618A
Hexachlorobutadiene	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 5:38	BSP	GCMS_T_070618A
2-Hexanone	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 5:38	BSP	GCMS_T_070618A
Iodomethane	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 5:38	BSP	GCMS_T_070618A
Isopropylbenzene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 5:38	BSP	GCMS_T_070618A
4-Isopropyltoluene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 5:38	BSP	GCMS_T_070618A
Methylene chloride	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 5:38	BSP	GCMS_T_070618A
4-Methyl-2-pentanone	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 5:38	BSP	GCMS_T_070618A
Methyl tert-butyl ether	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 5:38	BSP	GCMS_T_070618A
Naphthalene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 5:38	BSP	GCMS_T_070618A
n-Propylbenzene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 5:38	BSP	GCMS_T_070618A
Styrene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 5:38	BSP	GCMS_T_070618A
1,1,1,2-Tetrachloroethane	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 5:38	BSP	GCMS_T_070618A
1,1,2,2-Tetrachloroethane	<0.10	0.10		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 5:38	BSP	GCMS_T_070618A
Tetrachloroethene	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 5:38	BSP	GCMS_T_070618A
Toluene	<0.10	0.10		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 5:38	BSP	GCMS_T_070618A
1,2,3-Trichlorobenzene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 5:38	BSP	GCMS_T_070618A
1,2,4-Trichlorobenzene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 5:38	BSP	GCMS_T_070618A
1,1,1-Trichloroethane	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 5:38	BSP	GCMS_T_070618A
1,1,2-Trichloroethane	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 5:38	BSP	GCMS_T_070618A
Trichloroethene	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 5:38	BSP	GCMS_T_070618A
Trichlorofluoromethane	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 5:38	BSP	GCMS_T_070618A
1,2,3-Trichloropropane	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 5:38	BSP	GCMS_T_070618A
1,2,4-Trimethylbenzene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 5:38	BSP	GCMS_T_070618A
1,3,5-Trimethylbenzene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 5:38	BSP	GCMS_T_070618A
Vinyl acetate	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 5:38	BSP	GCMS_T_070618A
Vinyl chloride	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 5:38	BSP	GCMS_T_070618A
Xylenes, Total	<0.15	0.15		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 5:38	BSP	GCMS_T_070618A
4-Bromofluorobenzene(Surrogate)	86	59-131		%REC	1.0	SW8260B	6/15/07	6/19/07 5:38	BSP	GCMS_T_070618A
1,2-Dichloroethane-d4(Surrogate)	102	63-123		%REC	1.0	SW8260B	6/15/07	6/19/07 5:38	BSP	GCMS_T_070618A
Dibromofluoromethane(Surrogate)	100	63-123		%REC	1.0	SW8260B	6/15/07	6/19/07 5:38	BSP	GCMS_T_070618A
Toluene-d8(Surrogate)	93	64-120		%REC	1.0	SW8260B	6/15/07	6/19/07 5:38	BSP	GCMS_T_070618A

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Date Printed 26-Jun-07

License No. AZM133/AZ0133

CLIENT: Environmental & Engineering Consultants,
Work Order: 0706280
Lab ID: 0706280-06
Project Name: 35 E Toole Ave
Project Number: 206100

Client Sample ID: CB-5-30'
Collection Date: 6/14/2007 2:05:00 PM
Matrix: Soil

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
C6-C10 GRO	<20	20		mg/Kg	1.0	8015AZ	6/18/07	6/19/07 2:40	MJB	13924
C10-C22 DRO	<30	30		mg/Kg	1.0	8015AZ	6/18/07	6/19/07 2:40	MJB	13924
C22-C32 ORO	<100	100		mg/Kg	1.0	8015AZ	6/18/07	6/19/07 2:40	MJB	13924
C10-C32 SRL	<130	130		mg/Kg	1.0	8015AZ	6/18/07	6/19/07 2:40	MJB	13924
o-Terphenyl(Surrogate)	95	70-130		%REC	1.0	8015AZ	6/18/07	6/19/07 2:40	MJB	13924
Acenaphthene	<0.40	0.40	L2	mg/Kg	1.0	EPA 8310	6/18/07	6/20/07 19:52	NC	13934
Acenaphthylene	<0.40	0.40	L2	mg/Kg	1.0	EPA 8310	6/18/07	6/20/07 19:52	NC	13934
Anthracene	<0.040	0.040		mg/Kg	1.0	EPA 8310	6/18/07	6/20/07 19:52	NC	13934
Benz[a]anthracene	<0.040	0.040	L2	mg/Kg	1.0	EPA 8310	6/18/07	6/20/07 19:52	NC	13934
Benzo[a]pyrene	<0.010	0.010	V1	mg/Kg	1.0	EPA 8310	6/18/07	6/20/07 19:52	NC	13934
Benzo[b]fluoranthene	<0.040	0.040	L2	mg/Kg	1.0	EPA 8310	6/18/07	6/20/07 19:52	NC	13934
Benzo[g,h,i]perylene	<0.040	0.040	L2	mg/Kg	1.0	EPA 8310	6/18/07	6/20/07 19:52	NC	13934
Benzo[k]fluoranthene	<0.040	0.040	L2	mg/Kg	1.0	EPA 8310	6/18/07	6/20/07 19:52	NC	13934
Chrysene	<0.040	0.040	L2	mg/Kg	1.0	EPA 8310	6/18/07	6/20/07 19:52	NC	13934
Dibenz[a,h]anthracene	<0.040	0.040	L2	mg/Kg	1.0	EPA 8310	6/18/07	6/20/07 19:52	NC	13934
Fluoranthene	<0.040	0.040	L2	mg/Kg	1.0	EPA 8310	6/18/07	6/20/07 19:52	NC	13934
Fluorene	<0.040	0.040	L2	mg/Kg	1.0	EPA 8310	6/18/07	6/20/07 19:52	NC	13934
Indeno[1,2,3-cd]pyrene	<0.020	0.020	L2	mg/Kg	1.0	EPA 8310	6/18/07	6/20/07 19:52	NC	13934
Naphthalene	<0.10	0.10	L2	mg/Kg	1.0	EPA 8310	6/18/07	6/20/07 19:52	NC	13934
Phenanthrene	<0.080	0.080	L2	mg/Kg	1.0	EPA 8310	6/18/07	6/20/07 19:52	NC	13934
Pyrene	<0.040	0.040	L2	mg/Kg	1.0	EPA 8310	6/18/07	6/20/07 19:52	NC	13934
2-Chloroanthracene(Surrogate)	74	51-125		%REC	1.0	EPA 8310	6/18/07	6/20/07 19:52	NC	13934
Acetone	<1.5	1.5		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 6:23	BSP	GCMS_T_070618A
Benzene	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 6:23	BSP	GCMS_T_070618A
Bromobenzene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 6:23	BSP	GCMS_T_070618A
Bromochloromethane	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 6:23	BSP	GCMS_T_070618A
Bromodichloromethane	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 6:23	BSP	GCMS_T_070618A
Bromoform	<0.10	0.10		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 6:23	BSP	GCMS_T_070618A
Bromomethane	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 6:23	BSP	GCMS_T_070618A
2-Butanone	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 6:23	BSP	GCMS_T_070618A
n-Butylbenzene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 6:23	BSP	GCMS_T_070618A
sec-Butylbenzene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 6:23	BSP	GCMS_T_070618A
tert-Butylbenzene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 6:23	BSP	GCMS_T_070618A
Carbon disulfide	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 6:23	BSP	GCMS_T_070618A
Carbon tetrachloride	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 6:23	BSP	GCMS_T_070618A
Chlorobenzene	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 6:23	BSP	GCMS_T_070618A
Dibromochloromethane	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 6:23	BSP	GCMS_T_070618A
Chloroethane	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 6:23	BSP	GCMS_T_070618A

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CLIENT: Environmental & Engineering Consultants,
Work Order: 0706280
Lab ID: 0706280-06
Project Name: 35 E Toole Ave
Project Number: 206100

Client Sample ID: CB-5-30'
Collection Date: 6/14/2007 2:05:00 PM
Matrix: Soil

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Chloroform	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 6:23	BSP	GCMS_T_070618A
Chloromethane	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 6:23	BSP	GCMS_T_070618A
2-Chlorotoluene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 6:23	BSP	GCMS_T_070618A
4-Chlorotoluene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 6:23	BSP	GCMS_T_070618A
1,2-Dibromo-3-chloropropane	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 6:23	BSP	GCMS_T_070618A
1,2-Dibromoethane	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 6:23	BSP	GCMS_T_070618A
Dibromomethane	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 6:23	BSP	GCMS_T_070618A
1,2-Dichlorobenzene	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 6:23	BSP	GCMS_T_070618A
1,3-Dichlorobenzene	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 6:23	BSP	GCMS_T_070618A
1,4-Dichlorobenzene	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 6:23	BSP	GCMS_T_070618A
Dichlorodifluoromethane	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 6:23	BSP	GCMS_T_070618A
1,1-Dichloroethane	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 6:23	BSP	GCMS_T_070618A
1,2-Dichloroethane	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 6:23	BSP	GCMS_T_070618A
1,1-Dichloroethene	<0.10	0.10		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 6:23	BSP	GCMS_T_070618A
cis-1,2-Dichloroethene	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 6:23	BSP	GCMS_T_070618A
trans-1,2-Dichloroethene	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 6:23	BSP	GCMS_T_070618A
1,2-Dichloropropane	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 6:23	BSP	GCMS_T_070618A
1,3-Dichloropropane	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 6:23	BSP	GCMS_T_070618A
2,2-Dichloropropane	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 6:23	BSP	GCMS_T_070618A
1,1-Dichloropropene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 6:23	BSP	GCMS_T_070618A
cis-1,3-Dichloropropene	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 6:23	BSP	GCMS_T_070618A
trans-1,3-Dichloropropene	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 6:23	BSP	GCMS_T_070618A
Ethylbenzene	<0.10	0.10		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 6:23	BSP	GCMS_T_070618A
Hexachlorobutadiene	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 6:23	BSP	GCMS_T_070618A
2-Hexanone	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 6:23	BSP	GCMS_T_070618A
Iodomethane	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 6:23	BSP	GCMS_T_070618A
Isopropylbenzene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 6:23	BSP	GCMS_T_070618A
4-Isopropyltoluene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 6:23	BSP	GCMS_T_070618A
Methylene chloride	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 6:23	BSP	GCMS_T_070618A
4-Methyl-2-pentanone	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 6:23	BSP	GCMS_T_070618A
Methyl tert-butyl ether	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 6:23	BSP	GCMS_T_070618A
Naphthalene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 6:23	BSP	GCMS_T_070618A
n-Propylbenzene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 6:23	BSP	GCMS_T_070618A
Styrene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 6:23	BSP	GCMS_T_070618A
1,1,1,2-Tetrachloroethane	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 6:23	BSP	GCMS_T_070618A
1,1,2,2-Tetrachloroethane	<0.10	0.10		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 6:23	BSP	GCMS_T_070618A
Tetrachloroethene	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 6:23	BSP	GCMS_T_070618A
Toluene	<0.10	0.10		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 6:23	BSP	GCMS_T_070618A
1,2,3-Trichlorobenzene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 6:23	BSP	GCMS_T_070618A
1,2,4-Trichlorobenzene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 6:23	BSP	GCMS_T_070618A
1,1,1-Trichloroethane	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 6:23	BSP	GCMS_T_070618A

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CLIENT: Environmental & Engineering Consultants,
Work Order: 0706280
Lab ID: 0706280-06
Project Name: 35 E Toole Ave
Project Number: 206100

Client Sample ID: CB-5-30'
Collection Date: 6/14/2007 2:05:00 PM
Matrix: Soil

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
1,1,2-Trichloroethane	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 6:23	BSP	GCMS_T_070618A
Trichloroethene	<0.050	0.050		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 6:23	BSP	GCMS_T_070618A
Trichlorofluoromethane	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 6:23	BSP	GCMS_T_070618A
1,2,3-Trichloropropane	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 6:23	BSP	GCMS_T_070618A
1,2,4-Trimethylbenzene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 6:23	BSP	GCMS_T_070618A
1,3,5-Trimethylbenzene	<0.25	0.25		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 6:23	BSP	GCMS_T_070618A
Vinyl acetate	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 6:23	BSP	GCMS_T_070618A
Vinyl chloride	<0.50	0.50		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 6:23	BSP	GCMS_T_070618A
Xylenes, Total	<0.15	0.15		mg/Kg	1.0	SW8260B	6/15/07	6/19/07 6:23	BSP	GCMS_T_070618A
4-Bromofluorobenzene(Surrogate)	84	59-131		%REC	1.0	SW8260B	6/15/07	6/19/07 6:23	BSP	GCMS_T_070618A
1,2-Dichloroethane-d4(Surrogate)	101	63-123		%REC	1.0	SW8260B	6/15/07	6/19/07 6:23	BSP	GCMS_T_070618A
Dibromofluoromethane(Surrogate)	98	63-123		%REC	1.0	SW8260B	6/15/07	6/19/07 6:23	BSP	GCMS_T_070618A
Toluene-d8(Surrogate)	89	64-120		%REC	1.0	SW8260B	6/15/07	6/19/07 6:23	BSP	GCMS_T_070618A

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CLIENT: Environmental & Engineering Consultants,
Work Order: 0706280
Lab ID: 0706280-07
Project Name: 35 E Toole Ave
Project Number: 206100

Client Sample ID: Equip Blank
Collection Date: 6/14/2007 2:30:00 PM
Matrix: Water

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
C6-C10 GRO	<2.0	2.0		mg/L	1.0	8015B, MOD	6/25/07	6/25/07 13:28	MJB	13978
C10-C22 DRO	<3.0	3.0		mg/L	1.0	8015B, MOD	6/25/07	6/25/07 13:28	MJB	13978
C22-C32 ORO	<10	10		mg/L	1.0	8015B, MOD	6/25/07	6/25/07 13:28	MJB	13978
o-Terphenyl(Surrogate)	107	80-155		%REC	1.0	8015B, MOD	6/25/07	6/25/07 13:28	MJB	13978
Acenaphthene	<2.0	2.0		µg/L	1.0	EPA 8310	6/19/07	6/21/07 0:34	MJB	13939
Acenaphthylene	<4.0	4.0		µg/L	1.0	EPA 8310	6/19/07	6/21/07 0:34	MJB	13939
Anthracene	<0.20	0.20		µg/L	1.0	EPA 8310	6/19/07	6/21/07 0:34	MJB	13939
Benz[a]anthracene	<0.20	0.20	L2	µg/L	1.0	EPA 8310	6/19/07	6/21/07 0:34	MJB	13939
Benzo[a]pyrene	<0.10	0.10	V1	µg/L	1.0	EPA 8310	6/19/07	6/21/07 0:34	MJB	13939
Benzo[b]fluoranthene	<0.40	0.40	L2	µg/L	1.0	EPA 8310	6/19/07	6/21/07 0:34	MJB	13939
Benzo[g,h,i]perylene	<0.40	0.40	L2	µg/L	1.0	EPA 8310	6/19/07	6/21/07 0:34	MJB	13939
Benzo[k]fluoranthene	<0.20	0.20	L2	µg/L	1.0	EPA 8310	6/19/07	6/21/07 0:34	MJB	13939
Chrysene	<0.20	0.20	L2	µg/L	1.0	EPA 8310	6/19/07	6/21/07 0:34	MJB	13939
Dibenz[a,h]anthracene	<0.40	0.40	L2	µg/L	1.0	EPA 8310	6/19/07	6/21/07 0:34	MJB	13939
Fluoranthene	<0.40	0.40	L2	µg/L	1.0	EPA 8310	6/19/07	6/21/07 0:34	MJB	13939
Fluorene	<0.40	0.40		µg/L	1.0	EPA 8310	6/19/07	6/21/07 0:34	MJB	13939
Indeno[1,2,3-cd]pyrene	<0.10	0.10		µg/L	1.0	EPA 8310	6/19/07	6/21/07 0:34	MJB	13939
Naphthalene	<2.0	2.0		µg/L	1.0	EPA 8310	6/19/07	6/21/07 0:34	MJB	13939
Phenanthrene	<0.20	0.20		µg/L	1.0	EPA 8310	6/19/07	6/21/07 0:34	MJB	13939
Pyrene	<0.20	0.20	L2	µg/L	1.0	EPA 8310	6/19/07	6/21/07 0:34	MJB	13939
2-Chloroanthracene(Surrogate)	78	66-125		%REC	1.0	EPA 8310	6/19/07	6/21/07 0:34	MJB	13939
Acetone	<20	20		µg/L	1.0	SW8260B	N/A	6/16/07 14:13	NMM	N70616A
Benzene	<0.50	0.50		µg/L	1.0	SW8260B	N/A	6/16/07 14:13	NMM	N70616A
Bromobenzene	<1.5	1.5		µg/L	1.0	SW8260B	N/A	6/16/07 14:13	NMM	N70616A
Bromochloromethane	<0.50	0.50		µg/L	1.0	SW8260B	N/A	6/16/07 14:13	NMM	N70616A
Bromodichloromethane	<0.50	0.50		µg/L	1.0	SW8260B	N/A	6/16/07 14:13	NMM	N70616A
Bromoform	<1.0	1.0		µg/L	1.0	SW8260B	N/A	6/16/07 14:13	NMM	N70616A
Bromomethane	<5.0	5.0		µg/L	1.0	SW8260B	N/A	6/16/07 14:13	NMM	N70616A
2-Butanone	<5.0	5.0		µg/L	1.0	SW8260B	N/A	6/16/07 14:13	NMM	N70616A
n-Butylbenzene	<2.5	2.5		µg/L	1.0	SW8260B	N/A	6/16/07 14:13	NMM	N70616A
sec-Butylbenzene	<1.5	1.5		µg/L	1.0	SW8260B	N/A	6/16/07 14:13	NMM	N70616A
tert-Butylbenzene	<2.5	2.5		µg/L	1.0	SW8260B	N/A	6/16/07 14:13	NMM	N70616A
Carbon disulfide	<0.50	0.50		µg/L	1.0	SW8260B	N/A	6/16/07 14:13	NMM	N70616A
Carbon tetrachloride	<0.50	0.50		µg/L	1.0	SW8260B	N/A	6/16/07 14:13	NMM	N70616A
Chlorobenzene	<0.50	0.50		µg/L	1.0	SW8260B	N/A	6/16/07 14:13	NMM	N70616A
Dibromochloromethane	<0.50	0.50		µg/L	1.0	SW8260B	N/A	6/16/07 14:13	NMM	N70616A
Chloroethane	<5.0	5.0		µg/L	1.0	SW8260B	N/A	6/16/07 14:13	NMM	N70616A
Chloroform	<0.50	0.50		µg/L	1.0	SW8260B	N/A	6/16/07 14:13	NMM	N70616A

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Date Printed 26-Jun-07

License No. AZM133/AZ0133

CLIENT: Environmental & Engineering Consultants,
Work Order: 0706280
Lab ID: 0706280-07
Project Name: 35 E Toole Ave
Project Number: 206100

Client Sample ID: Equip Blank
Collection Date: 6/14/2007 2:30:00 PM
Matrix: Water

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Chloromethane	<5.0	5.0		µg/L	1.0	SW8260B	N/A	6/16/07 14:13	NMM	N70616A
2-Chlorotoluene	<1.5	1.5		µg/L	1.0	SW8260B	N/A	6/16/07 14:13	NMM	N70616A
4-Chlorotoluene	<2.0	2.0		µg/L	1.0	SW8260B	N/A	6/16/07 14:13	NMM	N70616A
1,2-Dibromo-3-chloropropane	<2.0	2.0		µg/L	1.0	SW8260B	N/A	6/16/07 14:13	NMM	N70616A
1,2-Dibromoethane	<0.50	0.50		µg/L	1.0	SW8260B	N/A	6/16/07 14:13	NMM	N70616A
Dibromomethane	<0.50	0.50		µg/L	1.0	SW8260B	N/A	6/16/07 14:13	NMM	N70616A
1,2-Dichlorobenzene	<1.5	1.5		µg/L	1.0	SW8260B	N/A	6/16/07 14:13	NMM	N70616A
1,3-Dichlorobenzene	<1.5	1.5		µg/L	1.0	SW8260B	N/A	6/16/07 14:13	NMM	N70616A
1,4-Dichlorobenzene	<1.5	1.5		µg/L	1.0	SW8260B	N/A	6/16/07 14:13	NMM	N70616A
Dichlorodifluoromethane	<2.0	2.0		µg/L	1.0	SW8260B	N/A	6/16/07 14:13	NMM	N70616A
1,1-Dichloroethane	<1.0	1.0		µg/L	1.0	SW8260B	N/A	6/16/07 14:13	NMM	N70616A
1,2-Dichloroethane	<1.0	1.0		µg/L	1.0	SW8260B	N/A	6/16/07 14:13	NMM	N70616A
1,1-Dichloroethene	<0.50	0.50		µg/L	1.0	SW8260B	N/A	6/16/07 14:13	NMM	N70616A
cis-1,2-Dichloroethene	<0.50	0.50		µg/L	1.0	SW8260B	N/A	6/16/07 14:13	NMM	N70616A
trans-1,2-Dichloroethene	<0.50	0.50		µg/L	1.0	SW8260B	N/A	6/16/07 14:13	NMM	N70616A
1,2-Dichloropropane	<0.50	0.50		µg/L	1.0	SW8260B	N/A	6/16/07 14:13	NMM	N70616A
1,3-Dichloropropane	<1.0	1.0		µg/L	1.0	SW8260B	N/A	6/16/07 14:13	NMM	N70616A
2,2-Dichloropropane	<0.50	0.50		µg/L	1.0	SW8260B	N/A	6/16/07 14:13	NMM	N70616A
1,1-Dichloropropene	<1.0	1.0		µg/L	1.0	SW8260B	N/A	6/16/07 14:13	NMM	N70616A
cis-1,3-Dichloropropene	<1.0	1.0		µg/L	1.0	SW8260B	N/A	6/16/07 14:13	NMM	N70616A
trans-1,3-Dichloropropene	<0.50	0.50		µg/L	1.0	SW8260B	N/A	6/16/07 14:13	NMM	N70616A
Ethylbenzene	<2.0	2.0		µg/L	1.0	SW8260B	N/A	6/16/07 14:13	NMM	N70616A
Hexachlorobutadiene	<5.0	5.0		µg/L	1.0	SW8260B	N/A	6/16/07 14:13	NMM	N70616A
2-Hexanone	<5.0	5.0		µg/L	1.0	SW8260B	N/A	6/16/07 14:13	NMM	N70616A
Iodomethane	<2.0	2.0		µg/L	1.0	SW8260B	N/A	6/16/07 14:13	NMM	N70616A
Isopropylbenzene	<2.5	2.5		µg/L	1.0	SW8260B	N/A	6/16/07 14:13	NMM	N70616A
4-Isopropyltoluene	<1.5	1.5		µg/L	1.0	SW8260B	N/A	6/16/07 14:13	NMM	N70616A
Methylene chloride	<3.0	3.0		µg/L	1.0	SW8260B	N/A	6/16/07 14:13	NMM	N70616A
4-Methyl-2-pentanone	<5.0	5.0		µg/L	1.0	SW8260B	N/A	6/16/07 14:13	NMM	N70616A
Methyl tert-butyl ether	<2.0	2.0		µg/L	1.0	SW8260B	N/A	6/16/07 14:13	NMM	N70616A
Naphthalene	<5.0	5.0		µg/L	1.0	SW8260B	N/A	6/16/07 14:13	NMM	N70616A
n-Propylbenzene	<2.0	2.0		µg/L	1.0	SW8260B	N/A	6/16/07 14:13	NMM	N70616A
Styrene	<1.0	1.0		µg/L	1.0	SW8260B	N/A	6/16/07 14:13	NMM	N70616A
1,1,1,2-Tetrachloroethane	<0.50	0.50		µg/L	1.0	SW8260B	N/A	6/16/07 14:13	NMM	N70616A
1,1,2,2-Tetrachloroethane	<0.50	0.50		µg/L	1.0	SW8260B	N/A	6/16/07 14:13	NMM	N70616A
Tetrachloroethene	<0.50	0.50		µg/L	1.0	SW8260B	N/A	6/16/07 14:13	NMM	N70616A
Toluene	<3.0	3.0		µg/L	1.0	SW8260B	N/A	6/16/07 14:13	NMM	N70616A
1,2,3-Trichlorobenzene	<5.0	5.0		µg/L	1.0	SW8260B	N/A	6/16/07 14:13	NMM	N70616A
1,2,4-Trichlorobenzene	<5.0	5.0		µg/L	1.0	SW8260B	N/A	6/16/07 14:13	NMM	N70616A
1,1,1-Trichloroethane	<0.50	0.50		µg/L	1.0	SW8260B	N/A	6/16/07 14:13	NMM	N70616A
1,1,2-Trichloroethane	<0.50	0.50		µg/L	1.0	SW8260B	N/A	6/16/07 14:13	NMM	N70616A

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Date Printed 26-Jun-07

License No. AZM133/AZ0133

CLIENT: Environmental & Engineering Consultants,
Work Order: 0706280
Lab ID: 0706280-07
Project Name: 35 E Toole Ave
Project Number: 206100

Client Sample ID: Equip Blank
Collection Date: 6/14/2007 2:30:00 PM
Matrix: Water

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Trichloroethene	<0.50	0.50		µg/L	1.0	SW8260B	N/A	6/16/07 14:13	NMM	N70616A
Trichlorofluoromethane	<2.0	2.0		µg/L	1.0	SW8260B	N/A	6/16/07 14:13	NMM	N70616A
1,2,3-Trichloropropane	<1.0	1.0		µg/L	1.0	SW8260B	N/A	6/16/07 14:13	NMM	N70616A
1,2,4-Trimethylbenzene	<2.0	2.0		µg/L	1.0	SW8260B	N/A	6/16/07 14:13	NMM	N70616A
1,3,5-Trimethylbenzene	<1.5	1.5		µg/L	1.0	SW8260B	N/A	6/16/07 14:13	NMM	N70616A
Vinyl acetate	<5.0	5.0		µg/L	1.0	SW8260B	N/A	6/16/07 14:13	NMM	N70616A
Vinyl chloride	<0.50	0.50		µg/L	1.0	SW8260B	N/A	6/16/07 14:13	NMM	N70616A
Xylenes, Total	<3.0	3.0		µg/L	1.0	SW8260B	N/A	6/16/07 14:13	NMM	N70616A
4-Bromofluorobenzene(Surrogate)	96	70-130		%REC	1.0	SW8260B	N/A	6/16/07 14:13	NMM	N70616A
Dibromofluoromethane(Surrogate)	106	70-130		%REC	1.0	SW8260B	N/A	6/16/07 14:13	NMM	N70616A
1,2-Dichloroethane-d4(Surrogate)	105	70-130		%REC	1.0	SW8260B	N/A	6/16/07 14:13	NMM	N70616A
Toluene-d8(Surrogate)	106	70-130		%REC	1.0	SW8260B	N/A	6/16/07 14:13	NMM	N70616A

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Date Printed 26-Jun-07

License No. AZM133/AZ0133

CLIENT: Environmental & Engineering Consultants,
Work Order: 0706280
Lab ID: 0706280-08
Project Name: 35 E Toole Ave
Project Number: 206100

Client Sample ID: Trip Blank
Collection Date: 6/14/2007
Matrix: Water

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Acetone	<20	20		µg/L	1.0	SW8260B	N/A	6/16/07 9:01	NMM	N70616A
Benzene	<0.50	0.50		µg/L	1.0	SW8260B	N/A	6/16/07 9:01	NMM	N70616A
Bromobenzene	<1.5	1.5		µg/L	1.0	SW8260B	N/A	6/16/07 9:01	NMM	N70616A
Bromochloromethane	<0.50	0.50		µg/L	1.0	SW8260B	N/A	6/16/07 9:01	NMM	N70616A
Bromodichloromethane	<0.50	0.50		µg/L	1.0	SW8260B	N/A	6/16/07 9:01	NMM	N70616A
Bromoform	<1.0	1.0		µg/L	1.0	SW8260B	N/A	6/16/07 9:01	NMM	N70616A
Bromomethane	<5.0	5.0		µg/L	1.0	SW8260B	N/A	6/16/07 9:01	NMM	N70616A
2-Butanone	<5.0	5.0		µg/L	1.0	SW8260B	N/A	6/16/07 9:01	NMM	N70616A
n-Butylbenzene	<2.5	2.5		µg/L	1.0	SW8260B	N/A	6/16/07 9:01	NMM	N70616A
sec-Butylbenzene	<1.5	1.5		µg/L	1.0	SW8260B	N/A	6/16/07 9:01	NMM	N70616A
tert-Butylbenzene	<2.5	2.5		µg/L	1.0	SW8260B	N/A	6/16/07 9:01	NMM	N70616A
Carbon disulfide	<0.50	0.50		µg/L	1.0	SW8260B	N/A	6/16/07 9:01	NMM	N70616A
Carbon tetrachloride	<0.50	0.50		µg/L	1.0	SW8260B	N/A	6/16/07 9:01	NMM	N70616A
Chlorobenzene	<0.50	0.50		µg/L	1.0	SW8260B	N/A	6/16/07 9:01	NMM	N70616A
Dibromochloromethane	<0.50	0.50		µg/L	1.0	SW8260B	N/A	6/16/07 9:01	NMM	N70616A
Chloroethane	<5.0	5.0		µg/L	1.0	SW8260B	N/A	6/16/07 9:01	NMM	N70616A
Chloroform	<0.50	0.50		µg/L	1.0	SW8260B	N/A	6/16/07 9:01	NMM	N70616A
Chloromethane	<5.0	5.0		µg/L	1.0	SW8260B	N/A	6/16/07 9:01	NMM	N70616A
2-Chlorotoluene	<1.5	1.5		µg/L	1.0	SW8260B	N/A	6/16/07 9:01	NMM	N70616A
4-Chlorotoluene	<2.0	2.0		µg/L	1.0	SW8260B	N/A	6/16/07 9:01	NMM	N70616A
1,2-Dibromo-3-chloropropane	<2.0	2.0		µg/L	1.0	SW8260B	N/A	6/16/07 9:01	NMM	N70616A
1,2-Dibromoethane	<0.50	0.50		µg/L	1.0	SW8260B	N/A	6/16/07 9:01	NMM	N70616A
Dibromomethane	<0.50	0.50		µg/L	1.0	SW8260B	N/A	6/16/07 9:01	NMM	N70616A
1,2-Dichlorobenzene	<1.5	1.5		µg/L	1.0	SW8260B	N/A	6/16/07 9:01	NMM	N70616A
1,3-Dichlorobenzene	<1.5	1.5		µg/L	1.0	SW8260B	N/A	6/16/07 9:01	NMM	N70616A
1,4-Dichlorobenzene	<1.5	1.5		µg/L	1.0	SW8260B	N/A	6/16/07 9:01	NMM	N70616A
Dichlorodifluoromethane	<2.0	2.0		µg/L	1.0	SW8260B	N/A	6/16/07 9:01	NMM	N70616A
1,1-Dichloroethane	<1.0	1.0		µg/L	1.0	SW8260B	N/A	6/16/07 9:01	NMM	N70616A
1,2-Dichloroethane	<1.0	1.0		µg/L	1.0	SW8260B	N/A	6/16/07 9:01	NMM	N70616A
1,1-Dichloroethene	<0.50	0.50		µg/L	1.0	SW8260B	N/A	6/16/07 9:01	NMM	N70616A
cis-1,2-Dichloroethene	<0.50	0.50		µg/L	1.0	SW8260B	N/A	6/16/07 9:01	NMM	N70616A
trans-1,2-Dichloroethene	<0.50	0.50		µg/L	1.0	SW8260B	N/A	6/16/07 9:01	NMM	N70616A
1,2-Dichloropropane	<0.50	0.50		µg/L	1.0	SW8260B	N/A	6/16/07 9:01	NMM	N70616A
1,3-Dichloropropane	<1.0	1.0		µg/L	1.0	SW8260B	N/A	6/16/07 9:01	NMM	N70616A
2,2-Dichloropropane	<0.50	0.50		µg/L	1.0	SW8260B	N/A	6/16/07 9:01	NMM	N70616A
1,1-Dichloropropene	<1.0	1.0		µg/L	1.0	SW8260B	N/A	6/16/07 9:01	NMM	N70616A
cis-1,3-Dichloropropene	<1.0	1.0		µg/L	1.0	SW8260B	N/A	6/16/07 9:01	NMM	N70616A
trans-1,3-Dichloropropene	<0.50	0.50		µg/L	1.0	SW8260B	N/A	6/16/07 9:01	NMM	N70616A
Ethylbenzene	<2.0	2.0		µg/L	1.0	SW8260B	N/A	6/16/07 9:01	NMM	N70616A
Hexachlorobutadiene	<5.0	5.0		µg/L	1.0	SW8260B	N/A	6/16/07 9:01	NMM	N70616A

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Date Printed 26-Jun-07

License No. AZM133/AZ0133

CLIENT: Environmental & Engineering Consultants,
Work Order: 0706280
Lab ID: 0706280-08
Project Name: 35 E Toole Ave
Project Number: 206100

Client Sample ID: Trip Blank
Collection Date: 6/14/2007
Matrix: Water

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
2-Hexanone	<5.0	5.0		µg/L	1.0	SW8260B	N/A	6/16/07 9:01	NMM	N70616A
Iodomethane	<2.0	2.0		µg/L	1.0	SW8260B	N/A	6/16/07 9:01	NMM	N70616A
Isopropylbenzene	<2.5	2.5		µg/L	1.0	SW8260B	N/A	6/16/07 9:01	NMM	N70616A
4-Isopropyltoluene	<1.5	1.5		µg/L	1.0	SW8260B	N/A	6/16/07 9:01	NMM	N70616A
Methylene chloride	<3.0	3.0		µg/L	1.0	SW8260B	N/A	6/16/07 9:01	NMM	N70616A
4-Methyl-2-pentanone	<5.0	5.0		µg/L	1.0	SW8260B	N/A	6/16/07 9:01	NMM	N70616A
Methyl tert-butyl ether	<2.0	2.0		µg/L	1.0	SW8260B	N/A	6/16/07 9:01	NMM	N70616A
Naphthalene	<5.0	5.0		µg/L	1.0	SW8260B	N/A	6/16/07 9:01	NMM	N70616A
n-Propylbenzene	<2.0	2.0		µg/L	1.0	SW8260B	N/A	6/16/07 9:01	NMM	N70616A
Styrene	<1.0	1.0		µg/L	1.0	SW8260B	N/A	6/16/07 9:01	NMM	N70616A
1,1,1,2-Tetrachloroethane	<0.50	0.50		µg/L	1.0	SW8260B	N/A	6/16/07 9:01	NMM	N70616A
1,1,2,2-Tetrachloroethane	<0.50	0.50		µg/L	1.0	SW8260B	N/A	6/16/07 9:01	NMM	N70616A
Tetrachloroethene	<0.50	0.50		µg/L	1.0	SW8260B	N/A	6/16/07 9:01	NMM	N70616A
Toluene	<3.0	3.0		µg/L	1.0	SW8260B	N/A	6/16/07 9:01	NMM	N70616A
1,2,3-Trichlorobenzene	<5.0	5.0		µg/L	1.0	SW8260B	N/A	6/16/07 9:01	NMM	N70616A
1,2,4-Trichlorobenzene	<5.0	5.0		µg/L	1.0	SW8260B	N/A	6/16/07 9:01	NMM	N70616A
1,1,1-Trichloroethane	<0.50	0.50		µg/L	1.0	SW8260B	N/A	6/16/07 9:01	NMM	N70616A
1,1,2-Trichloroethane	<0.50	0.50		µg/L	1.0	SW8260B	N/A	6/16/07 9:01	NMM	N70616A
Trichloroethene	<0.50	0.50		µg/L	1.0	SW8260B	N/A	6/16/07 9:01	NMM	N70616A
Trichlorofluoromethane	<2.0	2.0		µg/L	1.0	SW8260B	N/A	6/16/07 9:01	NMM	N70616A
1,2,3-Trichloropropane	<1.0	1.0		µg/L	1.0	SW8260B	N/A	6/16/07 9:01	NMM	N70616A
1,2,4-Trimethylbenzene	<2.0	2.0		µg/L	1.0	SW8260B	N/A	6/16/07 9:01	NMM	N70616A
1,3,5-Trimethylbenzene	<1.5	1.5		µg/L	1.0	SW8260B	N/A	6/16/07 9:01	NMM	N70616A
Vinyl acetate	<5.0	5.0		µg/L	1.0	SW8260B	N/A	6/16/07 9:01	NMM	N70616A
Vinyl chloride	<0.50	0.50		µg/L	1.0	SW8260B	N/A	6/16/07 9:01	NMM	N70616A
Xylenes, Total	<3.0	3.0		µg/L	1.0	SW8260B	N/A	6/16/07 9:01	NMM	N70616A
4-Bromofluorobenzene(Surrogate)	101	70-130		%REC	1.0	SW8260B	N/A	6/16/07 9:01	NMM	N70616A
Dibromofluoromethane(Surrogate)	107	70-130		%REC	1.0	SW8260B	N/A	6/16/07 9:01	NMM	N70616A
1,2-Dichloroethane-d4(Surrogate)	102	70-130		%REC	1.0	SW8260B	N/A	6/16/07 9:01	NMM	N70616A
Toluene-d8(Surrogate)	110	70-130		%REC	1.0	SW8260B	N/A	6/16/07 9:01	NMM	N70616A

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TRANSWEST GEOCHEM

Date: 02-Jul-07

License No. AZM133/AZ0133

CLIENT: Environmental & Engineering Consultants, I
Work Order: 0706280
Project: 35 E Toole Ave/206100

QC SUMMARY REPORT

Method Blank

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
C6-C10 GRO	<20	20		mg/Kg	1	8015AZ	6/18/07	6/18/07 10:08	MJB	13924
C10-C22 DRO	<30	30		mg/Kg	1	8015AZ	6/18/07	6/18/07 10:08	MJB	13924
C22-C32 ORO	<100	100		mg/Kg	1	8015AZ	6/18/07	6/18/07 10:08	MJB	13924
C10-C32 SRL	<130	130		mg/Kg	1	8015AZ	6/18/07	6/18/07 10:08	MJB	13924
o-Terphenyl	98	70-130		%REC	1	8015AZ	6/18/07	6/18/07 10:08	MJB	13924
C6-C10 GRO	<2.0	2.0		mg/L	1	8015B, MOD	6/25/07	6/25/07 14:59	MJB	13978
C10-C22 DRO	<3.0	3.0		mg/L	1	8015B, MOD	6/25/07	6/25/07 14:59	MJB	13978
C22-C32 ORO	<10	10		mg/L	1	8015B, MOD	6/25/07	6/25/07 14:59	MJB	13978
o-Terphenyl	114	80-155		%REC	1	8015B, MOD	6/25/07	6/25/07 14:59	MJB	13978
Acenaphthene	<0.40	0.40		mg/Kg	1	EPA 8310	6/18/07	6/20/07 11:31	NC	13934
Acenaphthylene	<0.40	0.40		mg/Kg	1	EPA 8310	6/18/07	6/20/07 11:31	NC	13934
Anthracene	<0.040	0.040		mg/Kg	1	EPA 8310	6/18/07	6/20/07 11:31	NC	13934
Benz[a]anthracene	<0.040	0.040		mg/Kg	1	EPA 8310	6/18/07	6/20/07 11:31	NC	13934
Benzo[a]pyrene	<0.010	0.010		mg/Kg	1	EPA 8310	6/18/07	6/20/07 11:31	NC	13934
Benzo[b]fluoranthene	<0.040	0.040		mg/Kg	1	EPA 8310	6/18/07	6/20/07 11:31	NC	13934
Benzo[g,h,i]perylene	<0.040	0.040		mg/Kg	1	EPA 8310	6/18/07	6/20/07 11:31	NC	13934
Benzo[k]fluoranthene	<0.040	0.040		mg/Kg	1	EPA 8310	6/18/07	6/20/07 11:31	NC	13934
Chrysene	<0.040	0.040		mg/Kg	1	EPA 8310	6/18/07	6/20/07 11:31	NC	13934
Dibenz[a,h]anthracene	<0.040	0.040		mg/Kg	1	EPA 8310	6/18/07	6/20/07 11:31	NC	13934
Fluoranthene	<0.040	0.040		mg/Kg	1	EPA 8310	6/18/07	6/20/07 11:31	NC	13934
Fluorene	<0.040	0.040		mg/Kg	1	EPA 8310	6/18/07	6/20/07 11:31	NC	13934
Indeno[1,2,3-cd]pyrene	<0.020	0.020		mg/Kg	1	EPA 8310	6/18/07	6/20/07 11:31	NC	13934
Naphthalene	<0.10	0.10		mg/Kg	1	EPA 8310	6/18/07	6/20/07 11:31	NC	13934
Phenanthrene	<0.080	0.080		mg/Kg	1	EPA 8310	6/18/07	6/20/07 11:31	NC	13934
Pyrene	<0.040	0.040		mg/Kg	1	EPA 8310	6/18/07	6/20/07 11:31	NC	13934
2-Chloroanthracene	64	51-125		%REC	1	EPA 8310	6/18/07	6/20/07 11:31	NC	13934
Acenaphthene	<2.0	2.0		µg/L	1	EPA 8310	6/19/07	6/20/07 21:57	MJB	13939
Acenaphthylene	<4.0	4.0		µg/L	1	EPA 8310	6/19/07	6/20/07 21:57	MJB	13939
Anthracene	<0.20	0.20		µg/L	1	EPA 8310	6/19/07	6/20/07 21:57	MJB	13939
Benz[a]anthracene	<0.20	0.20		µg/L	1	EPA 8310	6/19/07	6/20/07 21:57	MJB	13939
Benzo[a]pyrene	<0.10	0.10	V1	µg/L	1	EPA 8310	6/19/07	6/20/07 21:57	MJB	13939
Benzo[b]fluoranthene	<0.40	0.40		µg/L	1	EPA 8310	6/19/07	6/20/07 21:57	MJB	13939
Benzo[g,h,i]perylene	<0.40	0.40		µg/L	1	EPA 8310	6/19/07	6/20/07 21:57	MJB	13939
Benzo[k]fluoranthene	<0.20	0.20		µg/L	1	EPA 8310	6/19/07	6/20/07 21:57	MJB	13939
Chrysene	<0.20	0.20		µg/L	1	EPA 8310	6/19/07	6/20/07 21:57	MJB	13939
Dibenz[a,h]anthracene	<0.40	0.40		µg/L	1	EPA 8310	6/19/07	6/20/07 21:57	MJB	13939
Fluoranthene	<0.40	0.40		µg/L	1	EPA 8310	6/19/07	6/20/07 21:57	MJB	13939
Fluorene	<0.40	0.40		µg/L	1	EPA 8310	6/19/07	6/20/07 21:57	MJB	13939
Indeno[1,2,3-cd]pyrene	<0.10	0.10		µg/L	1	EPA 8310	6/19/07	6/20/07 21:57	MJB	13939
Naphthalene	<2.0	2.0		µg/L	1	EPA 8310	6/19/07	6/20/07 21:57	MJB	13939
Phenanthrene	<0.20	0.20		µg/L	1	EPA 8310	6/19/07	6/20/07 21:57	MJB	13939
Pyrene	<0.20	0.20		µg/L	1	EPA 8310	6/19/07	6/20/07 21:57	MJB	13939
2-Chloroanthracene	84	66-125		%REC	1	EPA 8310	6/19/07	6/20/07 21:57	MJB	13939

TRANSWEST GEOCHEM

Date: 02-Jul-07

License No. AZM133/AZ0133

CLIENT: Environmental & Engineering Consultants, I
Work Order: 0706280
Project: 35 E Toole Ave/206100

QC SUMMARY REPORT

Method Blank

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Acetone	<20	20		µg/L	1	SW8260B	N/A	6/16/07 8:22	NMM	N70616A
Benzene	<0.50	0.50		µg/L	1	SW8260B	N/A	6/16/07 8:22	NMM	N70616A
Bromobenzene	<1.5	1.5		µg/L	1	SW8260B	N/A	6/16/07 8:22	NMM	N70616A
Bromochloromethane	<0.50	0.50		µg/L	1	SW8260B	N/A	6/16/07 8:22	NMM	N70616A
Bromodichloromethane	<0.50	0.50		µg/L	1	SW8260B	N/A	6/16/07 8:22	NMM	N70616A
Bromoform	<1.0	1.0		µg/L	1	SW8260B	N/A	6/16/07 8:22	NMM	N70616A
Bromomethane	<5.0	5.0		µg/L	1	SW8260B	N/A	6/16/07 8:22	NMM	N70616A
2-Butanone	<5.0	5.0		µg/L	1	SW8260B	N/A	6/16/07 8:22	NMM	N70616A
n-Butylbenzene	<2.5	2.5		µg/L	1	SW8260B	N/A	6/16/07 8:22	NMM	N70616A
sec-Butylbenzene	<1.5	1.5		µg/L	1	SW8260B	N/A	6/16/07 8:22	NMM	N70616A
tert-Butylbenzene	<2.5	2.5		µg/L	1	SW8260B	N/A	6/16/07 8:22	NMM	N70616A
Carbon disulfide	<0.50	0.50		µg/L	1	SW8260B	N/A	6/16/07 8:22	NMM	N70616A
Carbon tetrachloride	<0.50	0.50		µg/L	1	SW8260B	N/A	6/16/07 8:22	NMM	N70616A
Chlorobenzene	<0.50	0.50		µg/L	1	SW8260B	N/A	6/16/07 8:22	NMM	N70616A
Dibromochloromethane	<0.50	0.50		µg/L	1	SW8260B	N/A	6/16/07 8:22	NMM	N70616A
Chloroethane	<5.0	5.0		µg/L	1	SW8260B	N/A	6/16/07 8:22	NMM	N70616A
Chloroform	<0.50	0.50		µg/L	1	SW8260B	N/A	6/16/07 8:22	NMM	N70616A
Chloromethane	<5.0	5.0		µg/L	1	SW8260B	N/A	6/16/07 8:22	NMM	N70616A
2-Chlorotoluene	<1.5	1.5		µg/L	1	SW8260B	N/A	6/16/07 8:22	NMM	N70616A
4-Chlorotoluene	<2.0	2.0		µg/L	1	SW8260B	N/A	6/16/07 8:22	NMM	N70616A
1,2-Dibromo-3-chloropropane	<2.0	2.0		µg/L	1	SW8260B	N/A	6/16/07 8:22	NMM	N70616A
1,2-Dibromoethane	<0.50	0.50		µg/L	1	SW8260B	N/A	6/16/07 8:22	NMM	N70616A
Dibromomethane	<0.50	0.50		µg/L	1	SW8260B	N/A	6/16/07 8:22	NMM	N70616A
1,2-Dichlorobenzene	<1.5	1.5		µg/L	1	SW8260B	N/A	6/16/07 8:22	NMM	N70616A
1,3-Dichlorobenzene	<1.5	1.5		µg/L	1	SW8260B	N/A	6/16/07 8:22	NMM	N70616A
1,4-Dichlorobenzene	<1.5	1.5		µg/L	1	SW8260B	N/A	6/16/07 8:22	NMM	N70616A
Dichlorodifluoromethane	<2.0	2.0		µg/L	1	SW8260B	N/A	6/16/07 8:22	NMM	N70616A
1,1-Dichloroethane	<1.0	1.0		µg/L	1	SW8260B	N/A	6/16/07 8:22	NMM	N70616A
1,2-Dichloroethane	<1.0	1.0		µg/L	1	SW8260B	N/A	6/16/07 8:22	NMM	N70616A
1,1-Dichloroethene	<0.50	0.50		µg/L	1	SW8260B	N/A	6/16/07 8:22	NMM	N70616A
cis-1,2-Dichloroethene	<0.50	0.50		µg/L	1	SW8260B	N/A	6/16/07 8:22	NMM	N70616A
trans-1,2-Dichloroethene	<0.50	0.50		µg/L	1	SW8260B	N/A	6/16/07 8:22	NMM	N70616A
1,2-Dichloropropane	<0.50	0.50		µg/L	1	SW8260B	N/A	6/16/07 8:22	NMM	N70616A
1,3-Dichloropropane	<1.0	1.0		µg/L	1	SW8260B	N/A	6/16/07 8:22	NMM	N70616A
2,2-Dichloropropane	<0.50	0.50		µg/L	1	SW8260B	N/A	6/16/07 8:22	NMM	N70616A
1,1-Dichloropropene	<1.0	1.0		µg/L	1	SW8260B	N/A	6/16/07 8:22	NMM	N70616A
cis-1,3-Dichloropropene	<1.0	1.0		µg/L	1	SW8260B	N/A	6/16/07 8:22	NMM	N70616A
trans-1,3-Dichloropropene	<0.50	0.50		µg/L	1	SW8260B	N/A	6/16/07 8:22	NMM	N70616A
Ethylbenzene	<2.0	2.0		µg/L	1	SW8260B	N/A	6/16/07 8:22	NMM	N70616A
Hexachlorobutadiene	<5.0	5.0		µg/L	1	SW8260B	N/A	6/16/07 8:22	NMM	N70616A
2-Hexanone	<5.0	5.0		µg/L	1	SW8260B	N/A	6/16/07 8:22	NMM	N70616A
Iodomethane	<2.0	2.0		µg/L	1	SW8260B	N/A	6/16/07 8:22	NMM	N70616A
Isopropylbenzene	<2.5	2.5		µg/L	1	SW8260B	N/A	6/16/07 8:22	NMM	N70616A
4-Isopropyltoluene	<1.5	1.5		µg/L	1	SW8260B	N/A	6/16/07 8:22	NMM	N70616A
Methylene chloride	<3.0	3.0		µg/L	1	SW8260B	N/A	6/16/07 8:22	NMM	N70616A

TRANSWEST GEOCHEM

Date: 02-Jul-07

License No. AZM133/AZ0133

CLIENT: Environmental & Engineering Consultants, I

Work Order: 0706280

Project: 35 E Toole Ave/206100

QC SUMMARY REPORT

Method Blank

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
4-Methyl-2-pentanone	<5.0	5.0		µg/L	1	SW8260B	N/A	6/16/07 8:22	NMM	N70616A
Methyl tert-butyl ether	<2.0	2.0		µg/L	1	SW8260B	N/A	6/16/07 8:22	NMM	N70616A
Naphthalene	<5.0	5.0		µg/L	1	SW8260B	N/A	6/16/07 8:22	NMM	N70616A
n-Propylbenzene	<2.0	2.0		µg/L	1	SW8260B	N/A	6/16/07 8:22	NMM	N70616A
Styrene	<1.0	1.0		µg/L	1	SW8260B	N/A	6/16/07 8:22	NMM	N70616A
1,1,1,2-Tetrachloroethane	<0.50	0.50		µg/L	1	SW8260B	N/A	6/16/07 8:22	NMM	N70616A
1,1,2,2-Tetrachloroethane	<0.50	0.50		µg/L	1	SW8260B	N/A	6/16/07 8:22	NMM	N70616A
Tetrachloroethene	<0.50	0.50		µg/L	1	SW8260B	N/A	6/16/07 8:22	NMM	N70616A
Toluene	<3.0	3.0		µg/L	1	SW8260B	N/A	6/16/07 8:22	NMM	N70616A
1,2,3-Trichlorobenzene	<5.0	5.0		µg/L	1	SW8260B	N/A	6/16/07 8:22	NMM	N70616A
1,2,4-Trichlorobenzene	<5.0	5.0		µg/L	1	SW8260B	N/A	6/16/07 8:22	NMM	N70616A
1,1,1-Trichloroethane	<0.50	0.50		µg/L	1	SW8260B	N/A	6/16/07 8:22	NMM	N70616A
1,1,2-Trichloroethane	<0.50	0.50		µg/L	1	SW8260B	N/A	6/16/07 8:22	NMM	N70616A
Trichloroethene	<0.50	0.50		µg/L	1	SW8260B	N/A	6/16/07 8:22	NMM	N70616A
Trichlorofluoromethane	<2.0	2.0		µg/L	1	SW8260B	N/A	6/16/07 8:22	NMM	N70616A
Trichlorotrifluoroethane	<5.0	5.0		µg/L	1	SW8260B	N/A	6/16/07 8:22	NMM	N70616A
1,2,3-Trichloropropane	<1.0	1.0		µg/L	1	SW8260B	N/A	6/16/07 8:22	NMM	N70616A
1,2,4-Trimethylbenzene	<2.0	2.0		µg/L	1	SW8260B	N/A	6/16/07 8:22	NMM	N70616A
1,3,5-Trimethylbenzene	<1.5	1.5		µg/L	1	SW8260B	N/A	6/16/07 8:22	NMM	N70616A
Vinyl acetate	<5.0	5.0		µg/L	1	SW8260B	N/A	6/16/07 8:22	NMM	N70616A
Vinyl chloride	<0.50	0.50		µg/L	1	SW8260B	N/A	6/16/07 8:22	NMM	N70616A
Xylenes, Total	<3.0	3.0		µg/L	1	SW8260B	N/A	6/16/07 8:22	NMM	N70616A
4-Bromofluorobenzene	100	70-130		%REC	1	SW8260B	N/A	6/16/07 8:22	NMM	N70616A
Dibromofluoromethane	105	70-130		%REC	1	SW8260B	N/A	6/16/07 8:22	NMM	N70616A
1,2-Dichloroethane-d4	100	70-130		%REC	1	SW8260B	N/A	6/16/07 8:22	NMM	N70616A
Toluene-d8	108	70-130		%REC	1	SW8260B	N/A	6/16/07 8:22	NMM	N70616A

TRANSWEST GEOCHEM

Date: 02-Jul-07

License No. AZM133/AZ0133

CLIENT: Environmental & Engineering Consultants, I
Work Order: 0706280
Project: 35 E Toole Ave/206100

QC SUMMARY REPORT

Method Blank

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Acetone	<1.0	1.0		mg/Kg	1	SW8260B	6/15/07	6/18/07 9:54	BSP	GCMS_T_070618A
Benzene	<0.050	0.050		mg/Kg	1	SW8260B	6/15/07	6/18/07 9:54	BSP	GCMS_T_070618A
Bromobenzene	<0.25	0.25		mg/Kg	1	SW8260B	6/15/07	6/18/07 9:54	BSP	GCMS_T_070618A
Bromochloromethane	<0.050	0.050		mg/Kg	1	SW8260B	6/15/07	6/18/07 9:54	BSP	GCMS_T_070618A
Bromodichloromethane	<0.050	0.050		mg/Kg	1	SW8260B	6/15/07	6/18/07 9:54	BSP	GCMS_T_070618A
Bromoform	<0.10	0.10		mg/Kg	1	SW8260B	6/15/07	6/18/07 9:54	BSP	GCMS_T_070618A
Bromomethane	<0.50	0.50		mg/Kg	1	SW8260B	6/15/07	6/18/07 9:54	BSP	GCMS_T_070618A
2-Butanone	<0.50	0.50		mg/Kg	1	SW8260B	6/15/07	6/18/07 9:54	BSP	GCMS_T_070618A
n-Butylbenzene	<0.25	0.25		mg/Kg	1	SW8260B	6/15/07	6/18/07 9:54	BSP	GCMS_T_070618A
sec-Butylbenzene	<0.25	0.25		mg/Kg	1	SW8260B	6/15/07	6/18/07 9:54	BSP	GCMS_T_070618A
tert-Butylbenzene	<0.25	0.25		mg/Kg	1	SW8260B	6/15/07	6/18/07 9:54	BSP	GCMS_T_070618A
Carbon disulfide	<0.50	0.50		mg/Kg	1	SW8260B	6/15/07	6/18/07 9:54	BSP	GCMS_T_070618A
Carbon tetrachloride	<0.050	0.050		mg/Kg	1	SW8260B	6/15/07	6/18/07 9:54	BSP	GCMS_T_070618A
Chlorobenzene	<0.050	0.050		mg/Kg	1	SW8260B	6/15/07	6/18/07 9:54	BSP	GCMS_T_070618A
Dibromochloromethane	<0.050	0.050		mg/Kg	1	SW8260B	6/15/07	6/18/07 9:54	BSP	GCMS_T_070618A
Chloroethane	<0.50	0.50		mg/Kg	1	SW8260B	6/15/07	6/18/07 9:54	BSP	GCMS_T_070618A
Chloroform	<0.050	0.050		mg/Kg	1	SW8260B	6/15/07	6/18/07 9:54	BSP	GCMS_T_070618A
Chloromethane	<0.50	0.50		mg/Kg	1	SW8260B	6/15/07	6/18/07 9:54	BSP	GCMS_T_070618A
2-Chlorotoluene	<0.25	0.25		mg/Kg	1	SW8260B	6/15/07	6/18/07 9:54	BSP	GCMS_T_070618A
4-Chlorotoluene	<0.25	0.25		mg/Kg	1	SW8260B	6/15/07	6/18/07 9:54	BSP	GCMS_T_070618A
1,2-Dibromo-3-chloropropane	<0.50	0.50		mg/Kg	1	SW8260B	6/15/07	6/18/07 9:54	BSP	GCMS_T_070618A
1,2-Dibromoethane	<0.50	0.50		mg/Kg	1	SW8260B	6/15/07	6/18/07 9:54	BSP	GCMS_T_070618A
Dibromomethane	<0.25	0.25		mg/Kg	1	SW8260B	6/15/07	6/18/07 9:54	BSP	GCMS_T_070618A
1,2-Dichlorobenzene	<0.050	0.050		mg/Kg	1	SW8260B	6/15/07	6/18/07 9:54	BSP	GCMS_T_070618A
1,3-Dichlorobenzene	<0.050	0.050		mg/Kg	1	SW8260B	6/15/07	6/18/07 9:54	BSP	GCMS_T_070618A
1,4-Dichlorobenzene	<0.050	0.050		mg/Kg	1	SW8260B	6/15/07	6/18/07 9:54	BSP	GCMS_T_070618A
Dichlorodifluoromethane	<0.50	0.50		mg/Kg	1	SW8260B	6/15/07	6/18/07 9:54	BSP	GCMS_T_070618A
1,1-Dichloroethane	<0.050	0.050		mg/Kg	1	SW8260B	6/15/07	6/18/07 9:54	BSP	GCMS_T_070618A
1,2-Dichloroethane	<0.050	0.050		mg/Kg	1	SW8260B	6/15/07	6/18/07 9:54	BSP	GCMS_T_070618A
1,1-Dichloroethene	<0.10	0.10		mg/Kg	1	SW8260B	6/15/07	6/18/07 9:54	BSP	GCMS_T_070618A
cis-1,2-Dichloroethene	<0.050	0.050		mg/Kg	1	SW8260B	6/15/07	6/18/07 9:54	BSP	GCMS_T_070618A
trans-1,2-Dichloroethene	<0.050	0.050		mg/Kg	1	SW8260B	6/15/07	6/18/07 9:54	BSP	GCMS_T_070618A
1,2-Dichloropropane	<0.050	0.050		mg/Kg	1	SW8260B	6/15/07	6/18/07 9:54	BSP	GCMS_T_070618A
1,3-Dichloropropane	<0.25	0.25		mg/Kg	1	SW8260B	6/15/07	6/18/07 9:54	BSP	GCMS_T_070618A
2,2-Dichloropropane	<0.25	0.25		mg/Kg	1	SW8260B	6/15/07	6/18/07 9:54	BSP	GCMS_T_070618A
1,1-Dichloropropene	<0.25	0.25		mg/Kg	1	SW8260B	6/15/07	6/18/07 9:54	BSP	GCMS_T_070618A
cis-1,3-Dichloropropene	<0.050	0.050		mg/Kg	1	SW8260B	6/15/07	6/18/07 9:54	BSP	GCMS_T_070618A
trans-1,3-Dichloropropene	<0.050	0.050		mg/Kg	1	SW8260B	6/15/07	6/18/07 9:54	BSP	GCMS_T_070618A
Ethylbenzene	<0.10	0.10		mg/Kg	1	SW8260B	6/15/07	6/18/07 9:54	BSP	GCMS_T_070618A
Hexachlorobutadiene	<0.50	0.50		mg/Kg	1	SW8260B	6/15/07	6/18/07 9:54	BSP	GCMS_T_070618A
2-Hexanone	<0.50	0.50		mg/Kg	1	SW8260B	6/15/07	6/18/07 9:54	BSP	GCMS_T_070618A
Iodomethane	<0.50	0.50		mg/Kg	1	SW8260B	6/15/07	6/18/07 9:54	BSP	GCMS_T_070618A
Isopropylbenzene	<0.25	0.25		mg/Kg	1	SW8260B	6/15/07	6/18/07 9:54	BSP	GCMS_T_070618A
4-Isopropyltoluene	<0.25	0.25		mg/Kg	1	SW8260B	6/15/07	6/18/07 9:54	BSP	GCMS_T_070618A
Methylene chloride	<0.50	0.50		mg/Kg	1	SW8260B	6/15/07	6/18/07 9:54	BSP	GCMS_T_070618A

TRANSWEST GEOCHEM

Date: 02-Jul-07

License No. AZM133/AZ0133

CLIENT: Environmental & Engineering Consultants, I

Work Order: 0706280

Project: 35 E Toole Ave/206100

QC SUMMARY REPORT

Method Blank

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
4-Methyl-2-pentanone	<0.50	0.50		mg/Kg	1	SW8260B	6/15/07	6/18/07 9:54	BSP	GCMS_T_070618A
Methyl tert-butyl ether	<0.25	0.25		mg/Kg	1	SW8260B	6/15/07	6/18/07 9:54	BSP	GCMS_T_070618A
Naphthalene	<0.25	0.25		mg/Kg	1	SW8260B	6/15/07	6/18/07 9:54	BSP	GCMS_T_070618A
n-Propylbenzene	<0.25	0.25		mg/Kg	1	SW8260B	6/15/07	6/18/07 9:54	BSP	GCMS_T_070618A
Styrene	<0.25	0.25		mg/Kg	1	SW8260B	6/15/07	6/18/07 9:54	BSP	GCMS_T_070618A
1,1,1,2-Tetrachloroethane	<0.25	0.25		mg/Kg	1	SW8260B	6/15/07	6/18/07 9:54	BSP	GCMS_T_070618A
1,1,2,2-Tetrachloroethane	<0.10	0.10		mg/Kg	1	SW8260B	6/15/07	6/18/07 9:54	BSP	GCMS_T_070618A
Tetrachloroethene	<0.050	0.050		mg/Kg	1	SW8260B	6/15/07	6/18/07 9:54	BSP	GCMS_T_070618A
Toluene	<0.10	0.10		mg/Kg	1	SW8260B	6/15/07	6/18/07 9:54	BSP	GCMS_T_070618A
1,2,3-Trichlorobenzene	<0.25	0.25		mg/Kg	1	SW8260B	6/15/07	6/18/07 9:54	BSP	GCMS_T_070618A
1,2,4-Trichlorobenzene	<0.25	0.25		mg/Kg	1	SW8260B	6/15/07	6/18/07 9:54	BSP	GCMS_T_070618A
1,1,1-Trichloroethane	<0.050	0.050		mg/Kg	1	SW8260B	6/15/07	6/18/07 9:54	BSP	GCMS_T_070618A
1,1,2-Trichloroethane	<0.050	0.050		mg/Kg	1	SW8260B	6/15/07	6/18/07 9:54	BSP	GCMS_T_070618A
Trichloroethene	<0.050	0.050		mg/Kg	1	SW8260B	6/15/07	6/18/07 9:54	BSP	GCMS_T_070618A
Trichlorofluoromethane	<0.50	0.50		mg/Kg	1	SW8260B	6/15/07	6/18/07 9:54	BSP	GCMS_T_070618A
1,2,3-Trichloropropane	<0.25	0.25		mg/Kg	1	SW8260B	6/15/07	6/18/07 9:54	BSP	GCMS_T_070618A
1,2,4-Trimethylbenzene	<0.25	0.25		mg/Kg	1	SW8260B	6/15/07	6/18/07 9:54	BSP	GCMS_T_070618A
1,3,5-Trimethylbenzene	<0.25	0.25		mg/Kg	1	SW8260B	6/15/07	6/18/07 9:54	BSP	GCMS_T_070618A
Vinyl acetate	<0.50	0.50		mg/Kg	1	SW8260B	6/15/07	6/18/07 9:54	BSP	GCMS_T_070618A
Vinyl chloride	<0.50	0.50		mg/Kg	1	SW8260B	6/15/07	6/18/07 9:54	BSP	GCMS_T_070618A
Xylenes, Total	<0.15	0.15		mg/Kg	1	SW8260B	6/15/07	6/18/07 9:54	BSP	GCMS_T_070618A
4-Bromofluorobenzene	87	59-131		%REC	1	SW8260B	6/15/07	6/18/07 9:54	BSP	GCMS_T_070618A
1,2-Dichloroethane-d4	98	63-123		%REC	1	SW8260B	6/15/07	6/18/07 9:54	BSP	GCMS_T_070618A
Dibromofluoromethane	102	63-123		%REC	1	SW8260B	6/15/07	6/18/07 9:54	BSP	GCMS_T_070618A
Toluene-d8	91	64-120		%REC	1	SW8260B	6/15/07	6/18/07 9:54	BSP	GCMS_T_070618A

TRANSWEST GEOCHEM

Date: 02-Jul-07

License No. AZM133/AZ0133

CLIENT: Environmental & Engineering Consultants, I
Work Order: 0706280
Project: 35 E Toole Ave/206100

QC SUMMARY REPORT

Sample Matrix Spike

Analyte	Result	PQL	SPK value	SPK Ref Val	% Rec	Low Limit	High Limit	RPD Ref Val	% RPD	RPD Limit	Qual
Sample ID: **0706276-01A-MS**	Batch ID: 13924			Test Code: 8015AZ				Date Analyzed: 06/18/07 13:09			
Client ID:				Units: mg/Kg				Date Prepared: 6/18/07			
C10-C22 DRO	517	30	500		103%	70	130				
o-Terphenyl	9.37	N/A	10.0		94%	70	130				
Sample ID: **0706276-01A-MSD**	Batch ID: 13924			Test Code: 8015AZ				Date Analyzed: 06/18/07 13:54			
Client ID:				Units: mg/Kg				Date Prepared: 6/18/07			
C10-C22 DRO	517	30	500		103%	70	130	517	0%	20	
o-Terphenyl	9.52	N/A	10.0		95%	70	130				
Sample ID: **0706127-01A-MS**	Batch ID: 13934			Test Code: EPA 8310				Date Analyzed: 06/20/07 13:05			
Client ID:				Units: mg/Kg				Date Prepared: 6/18/07			
Acenaphthene	1.432	0.40	2.000		72%	70	130				
Acenaphthylene	2.934	0.40	4.000		73%	48	131				
Anthracene	0.2060	0.040	0.2000		103%	52	121				
Benz[a]anthracene	0.1660	0.040	0.2000		83%	55	123				
Benzo[a]pyrene	0.1720	0.010	0.2000		86%	53	115				
Benzo[b]fluoranthene	0.2950	0.040	0.4000		74%	70	130				
Benzo[g,h,i]perylene	0.3100	0.040	0.4000		78%	70	130				
Benzo[k]fluoranthene	0.1490	0.040	0.2000		75%	70	130				
Chrysene	0.1470	0.040	0.2000		74%	54	129				
Dibenz[a,h]anthracene	0.2930	0.040	0.4000		73%	70	130				
Fluoranthene	0.4950	0.040	0.4000		124%	47	138				
Fluorene	0.3010	0.040	0.4000		75%	70	130				
Indeno[1,2,3-cd]pyrene	0.1530	0.020	0.2000		77%	70	130				
Naphthalene	1.461	0.10	2.000		73%	51	112				
Phenanthrene	0.1840	0.080	0.2000		92%	45	133				
Pyrene	0.1580	0.040	0.2000		79%	51	123				
2-Chloroanthracene	0.7050	N/A	1.000		71%	51	125				

TRANSWEST GEOCHEM

Date: 02-Jul-07

License No. AZM133/AZ0133

CLIENT: Environmental & Engineering Consultants, I
Work Order: 0706280
Project: 35 E Toole Ave/206100

QC SUMMARY REPORT

Sample Matrix Spike Duplicate

Analyte	Result	PQL	SPK value	SPK Ref Val	% Rec	Low Limit	High Limit	RPD Ref Val	% RPD	RPD Limit	Qual
Sample ID: **0706127-01A-MSD**	Batch ID: 13934			Test Code: EPA 8310				Date Analyzed: 06/20/07 13:36			
Client ID:				Units: mg/Kg				Date Prepared: 6/18/07			
Acenaphthene	1.494	0.40	2.000		75%	70	130	1.432	4%	28	
Acenaphthylene	3.107	0.40	4.000		78%	48	131	2.934	6%	27	
Anthracene	0.2060	0.040	0.2000		103%	52	121	0.206	0%	35	
Benz[a]anthracene	0.1710	0.040	0.2000		86%	55	123	0.166	3%	26	
Benzo[a]pyrene	0.1830	0.010	0.2000		92%	53	115	0.172	6%	27	
Benzo[b]fluoranthene	0.3180	0.040	0.4000		80%	70	130	0.295	8%	25	
Benzo[g,h,i]perylene	0.3280	0.040	0.4000		82%	70	130	0.31	6%	26	
Benzo[k]fluoranthene	0.1590	0.040	0.2000		80%	70	130	0.149	6%	25	
Chrysene	0.1550	0.040	0.2000		78%	54	129	0.147	5%	25	
Dibenz[a,h]anthracene	0.3130	0.040	0.4000		78%	70	130	0.293	7%	25	
Fluoranthene	0.4750	0.040	0.4000		119%	47	138	0.495	4%	33	
Fluorene	0.3200	0.040	0.4000		80%	70	130	0.301	6%	24	
Indeno[1,2,3-cd]pyrene	0.1600	0.020	0.2000		80%	70	130	0.153	4%	28	
Naphthalene	1.532	0.10	2.000		77%	51	112	1.461	5%	32	
Phenanthrene	0.1890	0.080	0.2000		95%	45	133	0.184	3%	28	
Pyrene	0.1600	0.040	0.2000		80%	51	123	0.158	1%	29	
2-Chloroanthracene	0.7250	N/A	1.000		73%	51	125				
Sample ID: **0706280-07C-MS**	Batch ID: 13939			Test Code: EPA 8310				Date Analyzed: 06/22/07 11:25			
Client ID: **Equip Blank**				Units: µg/L				Date Prepared: 6/19/07			
Acenaphthene	15.71	2.0	20.00		79%	70	130				
Acenaphthylene	32.76	4.0	40.00		82%	70	130				
Anthracene	1.650	0.20	2.000		83%	70	130				
Benz[a]anthracene	1.450	0.20	2.000		73%	70	130				
Benzo[a]pyrene	1.690	0.10	2.000		85%	60	126				
Benzo[b]fluoranthene	2.840	0.40	4.000		71%	70	130				
Benzo[g,h,i]perylene	2.980	0.40	4.000		75%	70	130				
Benzo[k]fluoranthene	1.460	0.20	2.000		73%	70	130				
Chrysene	1.420	0.20	2.000		71%	70	130				
Dibenz[a,h]anthracene	2.860	0.40	4.000		72%	70	130				
Fluoranthene	2.920	0.40	4.000		73%	32	156				
Fluorene	3.150	0.40	4.000		79%	70	130				
Indeno[1,2,3-cd]pyrene	1.540	0.10	2.000		77%	70	130				
Naphthalene	17.69	2.0	20.00		88%	70	130				
Phenanthrene	1.560	0.20	2.000		78%	54	141				
Pyrene	1.530	0.20	2.000		77%	70	130				
2-Chloroanthracene	7.660	N/A	10.00		77%	66	125				

TRANSWEST GEOCHEM

Date: 02-Jul-07

License No. AZM133/AZ0133

CLIENT: Environmental & Engineering Consultants, I
Work Order: 0706280
Project: 35 E Toole Ave/206100

QC SUMMARY REPORT

Sample Matrix Spike Duplicate

Analyte	Result	PQL	SPK value	SPK Ref Val	% Rec	Low Limit	High Limit	RPD Ref Val	% RPD	RPD Limit	Qual
Sample ID: **0706280-07C-MSD**	Batch ID: 13939			Test Code: EPA 8310				Date Analyzed: 06/22/07 11:57			
Client ID: **Equip Blank**				Units: µg/L				Date Prepared: 6/19/07			
Acenaphthene	17.34	2.0	20.00		87%	70	130	15.71	10%	20	
Acenaphthylene	35.03	4.0	40.00		88%	70	130	32.76	7%	20	
Anthracene	1.880	0.20	2.000		94%	70	130	1.65	13%	20	
Benz[a]anthracene	1.720	0.20	2.000		86%	70	130	1.45	17%	20	
Benzo[a]pyrene	1.960	0.10	2.000		98%	60	126	1.69	15%	20	
Benzo[b]fluoranthene	3.360	0.40	4.000		84%	70	130	2.84	17%	20	
Benzo[g,h,i]perylene	3.530	0.40	4.000		88%	70	130	2.98	17%	20	
Benzo[k]fluoranthene	1.720	0.20	2.000		86%	70	130	1.46	16%	20	
Chrysene	1.670	0.20	2.000		84%	70	130	1.42	16%	20	
Dibenz[a,h]anthracene	3.390	0.40	4.000		85%	70	130	2.86	17%	20	
Fluoranthene	3.340	0.40	4.000		84%	32	156	2.92	13%	22	
Fluorene	3.380	0.40	4.000		85%	70	130	3.15	7%	20	
Indeno[1,2,3-cd]pyrene	1.780	0.10	2.000		89%	70	130	1.54	14%	20	
Naphthalene	18.04	2.0	20.00		90%	70	130	17.69	2%	20	
Phenanthrene	1.760	0.20	2.000		88%	54	141	1.56	12%	20	
Pyrene	1.750	0.20	2.000		88%	70	130	1.53	13%	20	
2-Chloroanthracene	8.530	N/A	10.00		85%	66	125				

TRANSWEST GEOCHEM

Date: 02-Jul-07

License No. AZM133/AZ0133

CLIENT: Environmental & Engineering Consultants, I

Work Order: 0706280

Project: 35 E Toole Ave/206100

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 0706276-03A-MS Batch ID: GCMS_T_070618A Test Code: SW8260B Date Analyzed: 06/18/07 12:50

Client ID: Units: mg/Kg Date Prepared: 6/15/07

Analyte	Result	PQL	SPK value	SPK Ref Val	% Rec	Low Limit	High Limit	RPD Ref Val	% RPD	RPD Limit	Qual
Acetone	2.387	1.5	2.000		119%	39	147				
Benzene	0.8505	0.050	1.000		85%	70	130				
Bromobenzene	0.8070	0.25	1.000		81%	70	130				
Bromochloromethane	0.9180	0.050	1.000		92%	70	130				
Bromodichloromethane	0.8870	0.050	1.000		89%	70	130				
Bromoform	0.8160	0.10	1.000		82%	70	130				
Bromomethane	0.9090	0.50	1.000		91%	46	148				
2-Butanone	1.726	0.50	2.000		86%	49	122				
n-Butylbenzene	0.8015	0.25	1.000		80%	70	130				
sec-Butylbenzene	0.7975	0.25	1.000		80%	70	130				
tert-Butylbenzene	0.8240	0.25	1.000		82%	70	130				
Carbon disulfide	1.935	0.50	2.000		97%	40	124				
Carbon tetrachloride	0.8890	0.050	1.000		89%	70	130				
Chlorobenzene	0.8240	0.050	1.000		82%	70	130				
Dibromochloromethane	0.8395	0.050	1.000		84%	70	130				
Chloroethane	0.8235	0.50	1.000		82%	48	140				
Chloroform	0.9190	0.050	1.000		92%	70	130				
Chloromethane	0.5995	0.50	1.000		60%	23	147				
2-Chlorotoluene	0.7835	0.25	1.000		78%	70	130				
4-Chlorotoluene	0.7940	0.25	1.000		79%	70	130				
1,2-Dibromo-3-chloropropane	0.8660	0.50	1.000		87%	66	130				
1,2-Dibromoethane	0.8330	0.50	1.000		83%	70	130				
Dibromomethane	0.8345	0.25	1.000		83%	70	130				
1,2-Dichlorobenzene	0.8120	0.050	1.000		81%	70	130				
1,3-Dichlorobenzene	0.8170	0.050	1.000		82%	70	130				
1,4-Dichlorobenzene	0.8155	0.050	1.000		82%	70	130				
Dichlorodifluoromethane	0.3550	0.35	1.000		36%	8	164				
1,1-Dichloroethane	0.8995	0.050	1.000		90%	55	135				
1,2-Dichloroethane	0.9375	0.050	1.000		94%	70	130				
1,1-Dichloroethene	0.8745	0.10	1.000		87%	50	132				
cis-1,2-Dichloroethene	0.8665	0.050	1.000		87%	63	126				
trans-1,2-Dichloroethene	0.8260	0.050	1.000		83%	58	123				
1,2-Dichloropropane	0.8360	0.050	1.000		84%	70	130				
1,3-Dichloropropane	0.8120	0.25	1.000		81%	70	130				
2,2-Dichloropropane	0.8590	0.25	1.000		86%	55	125				
1,1-Dichloropropene	0.8370	0.25	1.000		84%	70	130				
cis-1,3-Dichloropropene	0.8810	0.050	1.000		88%	70	130				
trans-1,3-Dichloropropene	0.7970	0.050	1.000		80%	70	130				
Ethylbenzene	0.8175	0.10	1.000		82%	70	130				
Hexachlorobutadiene	0.8830	0.50	1.000		88%	70	130				
2-Hexanone	1.675	0.50	2.000		84%	70	130				
Iodomethane	1.747	0.50	2.000		87%	42	109				
Isopropylbenzene	0.8385	0.25	1.000		84%	70	130				

TRANSWEST GEOCHEM

Date: 02-Jul-07

License No. AZM133/AZ0133

CLIENT: Environmental & Engineering Consultants, I

Work Order: 0706280

Project: 35 E Toole Ave/206100

QC SUMMARY REPORT

Sample Matrix Spike

Analyte	Result	PQL	SPK value	SPK Ref Val	% Rec	Low Limit	High Limit	RPD Ref Val	% RPD	RPD Limit	Qual
4-Isopropyltoluene	0.8450	0.25	1.000		85%	70	130				
Methylene chloride	0.8430	0.50	1.000		84%	51	134				
4-Methyl-2-pentanone	1.658	0.50	2.000		83%	60	130				
Methyl tert-butyl ether	1.570	0.25	2.000		79%	70	130				
Naphthalene	0.8240	0.25	1.000		82%	62	132				
n-Propylbenzene	0.7840	0.25	1.000		78%	64	124				
Styrene	0.8380	0.25	1.000		84%	70	130				
1,1,1,2-Tetrachloroethane	0.8915	0.25	1.000		89%	70	130				
1,1,2,2-Tetrachloroethane	0.8095	0.10	1.000		81%	66	126				
Tetrachloroethene	0.8595	0.050	1.000		86%	62	125				
Toluene	0.8185	0.10	1.000		82%	63	124				
1,2,3-Trichlorobenzene	0.8245	0.25	1.000		82%	57	127				
1,2,4-Trichlorobenzene	0.8335	0.25	1.000		83%	70	130				
1,1,1-Trichloroethane	0.9345	0.050	1.000		93%	70	130				
1,1,2-Trichloroethane	0.7900	0.050	1.000		79%	70	130				
Trichloroethene	0.8825	0.050	1.000		88%	70	130				
Trichlorofluoromethane	0.8045	0.50	1.000		80%	42	137				
1,2,3-Trichloropropane	0.8605	0.25	1.000		86%	70	130				
1,2,4-Trimethylbenzene	0.8255	0.25	1.000		83%	70	130				
1,3,5-Trimethylbenzene	0.8405	0.25	1.000		84%	66	127				
Vinyl acetate	1.473	0.50	2.000		74%	32	133				
Vinyl chloride	0.8425	0.50	1.000		84%	32	150				
Xylenes, Total	2.492	0.15	3.000		83%	70	130				
4-Bromofluorobenzene	2.161	N/A	2.500		86%	59	131				
1,2-Dichloroethane-d4	2.321	N/A	2.500		93%	63	123				
Dibromofluoromethane	2.456	N/A	2.500		98%	63	123				
Toluene-d8	2.247	N/A	2.500		90%	64	120				

TRANSWEST GEOCHEM

Date: 02-Jul-07

License No. AZM133/AZ0133

CLIENT: Environmental & Engineering Consultants, I
Work Order: 0706280
Project: 35 E Toole Ave/206100

QC SUMMARY REPORT

Sample Matrix Spike Duplicate

Sample ID: 0706276-03A-MSD Batch ID: GCMS_T_070618A Test Code: SW8260B Date Analyzed: 06/18/07 13:34
Client ID: Units: mg/Kg Date Prepared: 6/15/07

Analyte	Result	PQL	SPK value	SPK Ref Val	% Rec	Low Limit	High Limit	RPD Ref Val	% RPD	RPD Limit	Qual
Acetone	2.185	1.5	2.000		109%	39	147	2.387	9%	38	
Benzene	0.8440	0.050	1.000		84%	70	130	0.8505	1%	20	
Bromobenzene	0.7860	0.25	1.000		79%	70	130	0.807	3%	20	
Bromochloromethane	0.9005	0.050	1.000		90%	70	130	0.918	2%	24	
Bromodichloromethane	0.8335	0.050	1.000		83%	70	130	0.887	6%	20	
Bromoform	0.7925	0.10	1.000		79%	70	130	0.816	3%	20	
Bromomethane	0.9060	0.50	1.000		91%	46	148	0.909	0%	31	
2-Butanone	1.642	0.50	2.000		82%	49	122	1.726	5%	29	
n-Butylbenzene	0.8200	0.25	1.000		82%	70	130	0.8015	2%	20	
sec-Butylbenzene	0.8140	0.25	1.000		81%	70	130	0.7975	2%	20	
tert-Butylbenzene	0.8325	0.25	1.000		83%	70	130	0.824	1%	20	
Carbon disulfide	1.899	0.50	2.000		95%	40	124	1.935	2%	27	
Carbon tetrachloride	0.9485	0.050	1.000		95%	70	130	0.889	6%	20	
Chlorobenzene	0.8200	0.050	1.000		82%	70	130	0.824	0%	20	
Dibromochloromethane	0.8285	0.050	1.000		83%	70	130	0.8395	1%	20	
Chloroethane	0.8010	0.50	1.000		80%	48	140	0.8235	3%	28	
Chloroform	0.9050	0.050	1.000		91%	70	130	0.919	2%	20	
Chloromethane	0.5710	0.50	1.000		57%	23	147	0.5995	5%	28	
2-Chlorotoluene	0.7905	0.25	1.000		79%	70	130	0.7835	1%	23	
4-Chlorotoluene	0.7975	0.25	1.000		80%	70	130	0.794	0%	23	
1,2-Dibromo-3-chloropropane	0.8125	0.50	1.000		81%	66	130	0.866	6%	23	
1,2-Dibromoethane	0.8140	0.50	1.000		81%	70	130	0.833	2%	20	
Dibromomethane	0.8395	0.25	1.000		84%	70	130	0.8345	1%	20	
1,2-Dichlorobenzene	0.8000	0.050	1.000		80%	70	130	0.812	1%	20	
1,3-Dichlorobenzene	0.8115	0.050	1.000		81%	70	130	0.817	1%	20	
1,4-Dichlorobenzene	0.8100	0.050	1.000		81%	70	130	0.8155	1%	20	
Dichlorodifluoromethane	0.3120	0.30	1.000		31%	8	164	0.355	13%	35	
1,1-Dichloroethane	0.9035	0.050	1.000		90%	55	135	0.8995	0%	24	
1,2-Dichloroethane	0.9125	0.050	1.000		91%	70	130	0.9375	3%	20	
1,1-Dichloroethene	0.8640	0.10	1.000		86%	50	132	0.8745	1%	30	
cis-1,2-Dichloroethene	0.8515	0.050	1.000		85%	63	126	0.8665	2%	22	
trans-1,2-Dichloroethene	0.8310	0.050	1.000		83%	58	123	0.826	1%	24	
1,2-Dichloropropane	0.8355	0.050	1.000		84%	70	130	0.836	0%	20	
1,3-Dichloropropane	0.7880	0.25	1.000		79%	70	130	0.812	3%	20	
2,2-Dichloropropane	0.8835	0.25	1.000		88%	55	125	0.859	3%	21	
1,1-Dichloropropene	0.8520	0.25	1.000		85%	70	130	0.837	2%	20	
cis-1,3-Dichloropropene	0.8690	0.050	1.000		87%	70	130	0.881	1%	20	
trans-1,3-Dichloropropene	0.8195	0.050	1.000		82%	70	130	0.797	3%	20	
Ethylbenzene	0.8170	0.10	1.000		82%	70	130	0.8175	0%	20	
Hexachlorobutadiene	0.9070	0.50	1.000		91%	70	130	0.883	3%	20	
2-Hexanone	1.564	0.50	2.000		78%	70	130	1.675	7%	24	
Iodomethane	1.717	0.50	2.000		86%	42	109	1.747	2%	26	
Isopropylbenzene	0.8440	0.25	1.000		84%	70	130	0.8385	1%	20	

TRANSWEST GEOCHEM

Date: 02-Jul-07

License No. AZM133/AZ0133

CLIENT: Environmental & Engineering Consultants, I

Work Order: 0706280

Project: 35 E Toole Ave/206100

QC SUMMARY REPORT

Sample Matrix Spike Duplicate

Analyte	Result	PQL	SPK value	SPK Ref Val	% Rec	Low Limit	High Limit	RPD Ref Val	% RPD	RPD Limit	Qual
4-Isopropyltoluene	0.8495	0.25	1.000		85%	70	130	0.845	1%	20	
Methylene chloride	0.8330	0.50	1.000		83%	51	134	0.843	1%	26	
4-Methyl-2-pentanone	1.609	0.50	2.000		80%	60	130	1.658	3%	25	
Methyl tert-butyl ether	1.590	0.25	2.000		80%	70	130	1.57	1%	20	
Naphthalene	0.8305	0.25	1.000		83%	62	132	0.824	1%	33	
n-Propylbenzene	0.7855	0.25	1.000		79%	64	124	0.784	0%	21	
Styrene	0.8370	0.25	1.000		84%	70	130	0.838	0%	20	
1,1,1,2-Tetrachloroethane	0.8665	0.25	1.000		87%	70	130	0.8915	3%	20	
1,1,2,2-Tetrachloroethane	0.7920	0.10	1.000		79%	66	126	0.8095	2%	25	
Tetrachloroethene	0.8590	0.050	1.000		86%	62	125	0.8595	0%	22	
Toluene	0.8195	0.10	1.000		82%	63	124	0.8185	0%	22	
1,2,3-Trichlorobenzene	0.8315	0.25	1.000		83%	57	127	0.8245	1%	35	
1,2,4-Trichlorobenzene	0.8255	0.25	1.000		83%	70	130	0.8335	1%	23	
1,1,1-Trichloroethane	0.9365	0.050	1.000		94%	70	130	0.9345	0%	20	
1,1,2-Trichloroethane	0.7875	0.050	1.000		79%	70	130	0.79	0%	20	
Trichloroethene	0.8920	0.050	1.000		89%	70	130	0.8825	1%	21	
Trichlorofluoromethane	0.8110	0.50	1.000		81%	42	137	0.8045	1%	29	
1,2,3-Trichloropropane	0.8410	0.25	1.000		84%	70	130	0.8605	2%	21	
1,2,4-Trimethylbenzene	0.8175	0.25	1.000		82%	70	130	0.8255	1%	20	
1,3,5-Trimethylbenzene	0.8275	0.25	1.000		83%	66	127	0.8405	2%	21	
Vinyl acetate	1.534	0.50	2.000		77%	32	133	1.473	4%	34	
Vinyl chloride	0.7805	0.50	1.000		78%	32	150	0.8425	8%	32	
Xylenes, Total	2.492	0.15	3.000		83%	70	130	2.492	0%	20	
4-Bromofluorobenzene	2.179	N/A	2.500		87%	59	131				
1,2-Dichloroethane-d4	2.325	N/A	2.500		93%	63	123				
Dibromofluoromethane	2.428	N/A	2.500		97%	63	123				
Toluene-d8	2.257	N/A	2.500		90%	64	120				

TRANSWEST GEOCHEM

Date: 02-Jul-07

License No. AZM133/AZ0133

CLIENT: Environmental & Engineering Consultants, I
Work Order: 0706280
Project: 35 E Toole Ave/206100

QC SUMMARY REPORT

Laboratory Fortified Blank

Analyte	Result	PQL	SPK value	SPK Ref Val	% Rec	Low Limit	High Limit	RPD Ref Val	% RPD	RPD Limit	Qual
Sample ID: **LFB-13924**	Batch ID: 13924			Test Code: 8015AZ				Date Analyzed: 06/18/07 10:53			
				Units: mg/Kg				Date Prepared: 6/18/07			
C10-C22 DRO	517	30	500		103%	70	130				
o-Terphenyl	9.40	N/A	10.0		94%	70	130				
Sample ID: **LFBD-13924**	Batch ID: 13924			Test Code: 8015AZ				Date Analyzed: 06/18/07 11:38			
				Units: mg/Kg				Date Prepared: 6/18/07			
C10-C22 DRO	515	30	500		103%	70	130	517	0%	20	
o-Terphenyl	9.36	N/A	10.0		94%	70	130				
Sample ID: **LCS-13978**	Batch ID: 13978			Test Code: 8015B, MOD				Date Analyzed: 06/25/07 11:58			
				Units: mg/L				Date Prepared: 6/25/07			
C10-C22 DRO	63.5	3.0	50.0		127%	70	130				
o-Terphenyl	1.09	N/A	1.00		109%	80	155				
Sample ID: **LCSD-13978**	Batch ID: 13978			Test Code: 8015B, MOD				Date Analyzed: 06/25/07 12:43			
				Units: mg/L				Date Prepared: 6/25/07			
C10-C22 DRO	60.9	3.0	50.0		122%	70	130	63.5	4%	20	
o-Terphenyl	1.08	N/A	1.00		108%	80	155				
Sample ID: **LCS-13934**	Batch ID: 13934			Test Code: EPA 8310				Date Analyzed: 06/20/07 12:02			
				Units: mg/Kg				Date Prepared: 6/18/07			
Acenaphthene	1.252	0.40	2.000		63%	70	130				L2
Acenaphthylene	2.519	0.40	4.000		63%	70	130				L2
Anthracene	0.1410	0.040	0.2000		71%	70	130				
Benz[a]anthracene	0.1300	0.040	0.2000		65%	70	130				L2
Benzo[a]pyrene	0.1490	0.010	0.2000		75%	70	130				
Benzo[b]fluoranthene	0.2530	0.040	0.4000		63%	70	130				L2
Benzo[g,h,i]perylene	0.2680	0.040	0.4000		67%	70	130				L2
Benzo[k]fluoranthene	0.1290	0.040	0.2000		65%	70	130				L2
Chrysene	0.1240	0.040	0.2000		62%	70	130				L2
Dibenz[a,h]anthracene	0.2550	0.040	0.4000		64%	70	130				L2
Fluoranthene	0.2550	0.040	0.4000		64%	70	130				L2
Fluorene	0.2480	0.040	0.4000		62%	70	130				L2
Indeno[1,2,3-cd]pyrene	0.1340	0.020	0.2000		67%	70	130				L2
Naphthalene	1.214	0.10	2.000		61%	70	130				L2
Phenanthrene	0.1300	0.080	0.2000		65%	70	130				L2
Pyrene	0.1210	0.040	0.2000		61%	70	130				L2
2-Chloroanthracene	0.6080	N/A	1.000		61%	51	125				

TRANSWEST GEOCHEM

Date: 02-Jul-07

License No. AZM133/AZ0133

CLIENT: Environmental & Engineering Consultants, I
Work Order: 0706280
Project: 35 E Toole Ave/206100

QC SUMMARY REPORT

Blank Spike

Analyte	Result	PQL	SPK value	SPK Ref Val	% Rec	Low Limit	High Limit	RPD Ref Val	% RPD	RPD Limit	Qual
Sample ID: **LCS-13939**	Batch ID: 13939			Test Code: EPA 8310				Date Analyzed: 06/22/07 10:23			
				Units: µg/L				Date Prepared: 6/19/07			
Acenaphthene	16.07	2.0	20.00		80%	70	130				
Acenaphthylene	34.24	4.0	40.00		86%	70	130				
Anthracene	1.570	0.20	2.000		79%	70	130				
Benz[a]anthracene	1.310	0.20	2.000		66%	70	130				L2
Benzo[a]pyrene	1.540	0.10	2.000		77%	61	126				
Benzo[b]fluoranthene	2.590	0.40	4.000		65%	70	130				L2
Benzo[g,h,i]perylene	2.720	0.40	4.000		68%	70	130				L2
Benzo[k]fluoranthene	1.330	0.20	2.000		67%	70	130				L2
Chrysene	1.280	0.20	2.000		64%	70	130				L2
Dibenz[a,h]anthracene	2.610	0.40	4.000		65%	70	130				L2
Fluoranthene	2.740	0.40	4.000		69%	70	130				L2
Fluorene	3.120	0.40	4.000		78%	70	130				
Indeno[1,2,3-cd]pyrene	1.470	0.10	2.000		74%	70	130				
Naphthalene	18.11	2.0	20.00		91%	46	116				
Phenanthrene	1.480	0.20	2.000		74%	70	130				
Pyrene	1.320	0.20	2.000		66%	70	130				L2
2-Chloroanthracene	7.940	N/A	10.00		79%	66	125				
Sample ID: **LCSD-13934**	Batch ID: 13934			Test Code: EPA 8310				Date Analyzed: 06/20/07 12:34			
				Units: mg/Kg				Date Prepared: 6/18/07			
Acenaphthene	1.441	0.40	2.000		72%	70	130	1.252	14%	20	
Acenaphthylene	2.928	0.40	4.000		73%	70	130	2.519	15%	20	
Anthracene	0.1620	0.040	0.2000		81%	70	130	0.141	14%	20	
Benz[a]anthracene	0.1450	0.040	0.2000		73%	70	130	0.13	11%	20	
Benzo[a]pyrene	0.1690	0.010	0.2000		85%	70	130	0.149	13%	22	
Benzo[b]fluoranthene	0.2870	0.040	0.4000		72%	70	130	0.253	13%	20	
Benzo[g,h,i]perylene	0.3050	0.040	0.4000		76%	70	130	0.268	13%	20	
Benzo[k]fluoranthene	0.1480	0.040	0.2000		74%	70	130	0.129	14%	20	
Chrysene	0.1420	0.040	0.2000		71%	70	130	0.124	14%	20	
Dibenz[a,h]anthracene	0.2920	0.040	0.4000		73%	70	130	0.255	14%	20	
Fluoranthene	0.2930	0.040	0.4000		73%	70	130	0.255	14%	21	
Fluorene	0.2900	0.040	0.4000		73%	70	130	0.248	16%	20	
Indeno[1,2,3-cd]pyrene	0.1510	0.020	0.2000		76%	70	130	0.134	12%	20	
Naphthalene	1.442	0.10	2.000		72%	70	130	1.214	17%	20	
Phenanthrene	0.1510	0.080	0.2000		76%	70	130	0.13	15%	20	
Pyrene	0.1470	0.040	0.2000		74%	70	130	0.121	19%	25	
2-Chloroanthracene	0.7140	N/A	1.000		71%	51	125				

TRANSWEST GEOCHEM

Date: 02-Jul-07

License No. AZM133/AZ0133

CLIENT: Environmental & Engineering Consultants, I
Work Order: 0706280
Project: 35 E Toole Ave/206100

QC SUMMARY REPORT

Blank Spike Duplicate

Analyte	Result	PQL	SPK value	SPK Ref Val	% Rec	Low Limit	High Limit	RPD Ref Val	% RPD	RPD Limit	Qual
Sample ID: **LCSD-13939**	Batch ID: 13939			Test Code: EPA 8310				Date Analyzed: 06/22/07 10:54			
				Units: µg/L				Date Prepared: 6/19/07			
Acenaphthene	16.78	2.0	20.00		84%	70	130	16.07	4%	20	
Acenaphthylene	34.88	4.0	40.00		87%	70	130	34.24	2%	20	
Anthracene	1.720	0.20	2.000		86%	70	130	1.57	9%	20	
Benz[a]anthracene	1.480	0.20	2.000		74%	70	130	1.31	12%	20	
Benzo[a]pyrene	1.720	0.10	2.000		86%	61	126	1.54	11%	20	
Benzo[b]fluoranthene	2.900	0.40	4.000		73%	70	130	2.59	11%	20	
Benzo[g,h,i]perylene	3.030	0.40	4.000		76%	70	130	2.72	11%	20	
Benzo[k]fluoranthene	1.480	0.20	2.000		74%	70	130	1.33	11%	20	
Chrysene	1.430	0.20	2.000		72%	70	130	1.28	11%	20	
Dibenz[a,h]anthracene	2.920	0.40	4.000		73%	70	130	2.61	11%	20	
Fluoranthene	3.030	0.40	4.000		76%	70	130	2.74	10%	20	
Fluorene	3.260	0.40	4.000		81%	70	130	3.12	4%	20	
Indeno[1,2,3-cd]pyrene	1.540	0.10	2.000		77%	70	130	1.47	5%	20	
Naphthalene	17.94	2.0	20.00		90%	46	116	18.11	1%	23	
Phenanthrene	1.600	0.20	2.000		80%	70	130	1.48	8%	20	
Pyrene	1.450	0.20	2.000		73%	70	130	1.32	9%	20	
2-Chloroanthracene	8.350	N/A	10.00		84%	66	125				

TRANSWEST GEOCHEM

Date: 02-Jul-07

License No. AZM133/AZ0133

CLIENT: Environmental & Engineering Consultants, I
Work Order: 0706280
Project: 35 E Toole Ave/206100

QC SUMMARY REPORT

Blank Spike

Sample ID: LCS | Batch ID: N70616A | Test Code: SW8260B | Units: µg/L | Date Analyzed: 06/16/07 07:05 | Date Prepared: N/A

Analyte	Result	PQL	SPK value	SPK Ref Val	% Rec	Low Limit	High Limit	RPD Ref Val	% RPD	RPD Limit	Qual
Acetone	28.54	20	20.00		143%	35	179				
Benzene	20.30	0.50	20.00		102%	70	130				
Bromobenzene	19.71	1.5	20.00		99%	70	130				
Bromochloromethane	20.22	0.50	20.00		101%	70	130				
Bromodichloromethane	20.32	0.50	20.00		102%	70	130				
Bromoform	19.10	1.0	20.00		96%	70	130				
Bromomethane	21.61	5.0	20.00		108%	61	132				
2-Butanone	25.94	5.0	20.00		130%	61	144				
n-Butylbenzene	20.69	2.5	20.00		103%	70	130				
sec-Butylbenzene	20.82	1.5	20.00		104%	67	128				
tert-Butylbenzene	20.44	2.5	20.00		102%	70	130				
Carbon disulfide	21.66	0.50	20.00		108%	60	155				
Carbon tetrachloride	18.88	0.50	20.00		94%	70	130				
Chlorobenzene	20.08	0.50	20.00		100%	70	130				
Dibromochloromethane	20.51	0.50	20.00		103%	70	130				
Chloroethane	21.87	5.0	20.00		109%	70	130				
Chloroform	20.40	0.50	20.00		102%	70	130				
Chloromethane	19.86	5.0	20.00		99%	47	126				
2-Chlorotoluene	20.10	1.5	20.00		101%	70	130				
4-Chlorotoluene	20.71	2.0	20.00		104%	70	130				
1,2-Dibromo-3-chloropropane	18.86	2.0	20.00		94%	66	124				
1,2-Dibromoethane	19.70	0.50	20.00		99%	70	130				
Dibromomethane	18.71	0.50	20.00		94%	70	130				
1,2-Dichlorobenzene	20.00	1.5	20.00		100%	70	130				
1,3-Dichlorobenzene	20.33	1.5	20.00		102%	70	130				
1,4-Dichlorobenzene	19.99	1.5	20.00		100%	70	130				
Dichlorodifluoromethane	20.89	2.0	20.00		104%	18	138				
1,1-Dichloroethane	21.31	1.0	20.00		107%	70	130				
1,2-Dichloroethane	20.71	1.0	20.00		104%	70	130				
1,1-Dichloroethene	22.33	0.50	20.00		112%	70	130				
cis-1,2-Dichloroethene	20.23	0.50	20.00		101%	70	130				
trans-1,2-Dichloroethene	21.16	0.50	20.00		106%	70	130				
1,2-Dichloropropane	20.53	0.50	20.00		103%	70	130				
1,3-Dichloropropane	19.53	1.0	20.00		98%	70	130				
2,2-Dichloropropane	21.12	0.50	20.00		106%	64	145				
1,1-Dichloropropene	20.25	1.0	20.00		101%	70	130				
cis-1,3-Dichloropropene	21.09	1.0	20.00		105%	70	130				
trans-1,3-Dichloropropene	22.60	0.50	20.00		113%	70	130				
Ethylbenzene	19.87	2.0	20.00		99%	70	130				
Hexachlorobutadiene	21.80	5.0	20.00		109%	69	149				
2-Hexanone	21.47	5.0	20.00		107%	68	131				
Iodomethane	21.93	2.0	20.00		110%	61	162				
Isopropylbenzene	23.85	2.5	20.00		119%	70	130				

TRANSWEST GEOCHEM

Date: 02-Jul-07

License No. AZM133/AZ0133

CLIENT: Environmental & Engineering Consultants, I

Work Order: 0706280

Project: 35 E Toole Ave/206100

QC SUMMARY REPORT

Blank Spike

Analyte	Result	PQL	SPK value	SPK Ref Val	% Rec	Low Limit	High Limit	RPD Ref Val	% RPD	RPD Limit	Qual
4-Isopropyltoluene	21.47	1.5	20.00		107%	70	130				
Methylene chloride	19.23	3.0	20.00		96%	70	130				
4-Methyl-2-pentanone	22.34	5.0	20.00		112%	70	130				
Methyl tert-butyl ether	20.55	2.0	20.00		103%	70	130				
Naphthalene	22.76	5.0	20.00		114%	66	139				
n-Propylbenzene	21.57	2.0	20.00		108%	70	130				
Styrene	20.09	1.0	20.00		100%	70	130				
1,1,1,2-Tetrachloroethane	19.66	0.50	20.00		98%	70	130				
1,1,2,2-Tetrachloroethane	21.34	0.50	20.00		107%	70	130				
Tetrachloroethene	19.00	0.50	20.00		95%	70	130				
Toluene	20.27	3.0	20.00		101%	70	130				
1,2,3-Trichlorobenzene	23.27	5.0	20.00		116%	66	143				
1,2,4-Trichlorobenzene	20.84	5.0	20.00		104%	69	133				
1,1,1-Trichloroethane	19.12	0.50	20.00		96%	70	130				
1,1,2-Trichloroethane	20.35	0.50	20.00		102%	70	130				
Trichloroethene	19.63	0.50	20.00		98%	70	130				
Trichlorofluoromethane	20.31	2.0	20.00		102%	72	138				
1,2,3-Trichloropropane	20.40	1.0	20.00		102%	70	130				
1,2,4-Trimethylbenzene	20.32	2.0	20.00		102%	70	130				
1,3,5-Trimethylbenzene	21.24	1.5	20.00		106%	70	130				
Vinyl acetate	24.39	5.0	20.00		122%	56	164				
Vinyl chloride	23.37	0.50	20.00		117%	63	134				
Xylenes, Total	60.62	3.0	60.00		101%	70	130				
4-Bromofluorobenzene	50.45	N/A	50.00		101%	70	130				
Dibromofluoromethane	54.55	N/A	50.00		109%	70	130				
1,2-Dichloroethane-d4	52.89	N/A	50.00		106%	70	130				
Toluene-d8	52.35	N/A	50.00		105%	70	130				

TRANSWEST GEOCHEM

Date: 02-Jul-07

License No. AZM133/AZ0133

CLIENT: Environmental & Engineering Consultants, I
Work Order: 0706280
Project: 35 E Toole Ave/206100

QC SUMMARY REPORT

Blank Spike Duplicate

Analyte	Result	PQL	SPK value	SPK Ref Val	% Rec	Low Limit	High Limit	RPD Ref Val	% RPD	RPD Limit	Qual
Sample ID: **LCSD**	Batch ID: N70616A			Test Code: SW8260B				Date Analyzed: 06/16/07 07:44			
				Units: µg/L				Date Prepared: N/A			
Acetone	29.41	20	20.00		147%	35	179	28.54	3%	37	
Benzene	19.59	0.50	20.00		98%	70	130	20.3	4%	20	
Bromobenzene	19.21	1.5	20.00		96%	70	130	19.71	3%	20	
Bromochloromethane	19.61	0.50	20.00		98%	70	130	20.22	3%	20	
Bromodichloromethane	19.86	0.50	20.00		99%	70	130	20.32	2%	20	
Bromoform	19.75	1.0	20.00		99%	70	130	19.1	3%	20	
Bromomethane	21.41	5.0	20.00		107%	61	132	21.61	1%	24	
2-Butanone	27.81	5.0	20.00		139%	61	144	25.94	7%	24	
n-Butylbenzene	19.50	2.5	20.00		98%	70	130	20.69	6%	20	
sec-Butylbenzene	19.76	1.5	20.00		99%	67	128	20.82	5%	20	
tert-Butylbenzene	19.38	2.5	20.00		97%	70	130	20.44	5%	20	
Carbon disulfide	20.84	0.50	20.00		104%	60	155	21.66	4%	20	
Carbon tetrachloride	18.25	0.50	20.00		91%	70	130	18.88	3%	20	
Chlorobenzene	19.65	0.50	20.00		98%	70	130	20.08	2%	20	
Dibromochloromethane	20.64	0.50	20.00		103%	70	130	20.51	1%	20	
Chloroethane	21.43	5.0	20.00		107%	70	130	21.87	2%	21	
Chloroform	19.92	0.50	20.00		100%	70	130	20.4	2%	20	
Chloromethane	18.71	5.0	20.00		94%	47	126	19.86	6%	20	
2-Chlorotoluene	19.14	1.5	20.00		96%	70	130	20.1	5%	20	
4-Chlorotoluene	19.72	2.0	20.00		99%	70	130	20.71	5%	20	
1,2-Dibromo-3-chloropropane	20.35	2.0	20.00		102%	66	124	18.86	8%	20	
1,2-Dibromoethane	20.02	0.50	20.00		100%	70	130	19.7	2%	20	
Dibromomethane	19.06	0.50	20.00		95%	70	130	18.71	2%	20	
1,2-Dichlorobenzene	19.28	1.5	20.00		96%	70	130	20	4%	20	
1,3-Dichlorobenzene	19.23	1.5	20.00		96%	70	130	20.33	6%	20	
1,4-Dichlorobenzene	19.51	1.5	20.00		98%	70	130	19.99	2%	20	
Dichlorodifluoromethane	19.77	2.0	20.00		99%	18	138	20.89	6%	20	
1,1-Dichloroethane	20.57	1.0	20.00		103%	70	130	21.31	4%	20	
1,2-Dichloroethane	20.75	1.0	20.00		104%	70	130	20.71	0%	20	
1,1-Dichloroethene	21.97	0.50	20.00		110%	70	130	22.33	2%	20	
cis-1,2-Dichloroethene	19.55	0.50	20.00		98%	70	130	20.23	3%	20	
trans-1,2-Dichloroethene	20.28	0.50	20.00		101%	70	130	21.16	4%	20	
1,2-Dichloropropane	19.75	0.50	20.00		99%	70	130	20.53	4%	20	
1,3-Dichloropropane	20.00	1.0	20.00		100%	70	130	19.53	2%	20	
2,2-Dichloropropane	20.12	0.50	20.00		101%	64	145	21.12	5%	20	
1,1-Dichloropropene	19.53	1.0	20.00		98%	70	130	20.25	4%	20	
cis-1,3-Dichloropropene	20.76	1.0	20.00		104%	70	130	21.09	2%	20	
trans-1,3-Dichloropropene	22.44	0.50	20.00		112%	70	130	22.6	1%	20	
Ethylbenzene	19.28	2.0	20.00		96%	70	130	19.87	3%	20	
Hexachlorobutadiene	20.34	5.0	20.00		102%	69	149	21.8	7%	20	
2-Hexanone	23.22	5.0	20.00		116%	68	131	21.47	8%	20	
Iodomethane	20.44	2.0	20.00		102%	61	162	21.93	7%	20	
Isopropylbenzene	22.75	2.5	20.00		114%	70	130	23.85	5%	20	

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Date: 02-Jul-07

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CLIENT: Environmental & Engineering Consultants, I

Work Order: 0706280

Project: 35 E Toole Ave/206100

QC SUMMARY REPORT

Blank Spike Duplicate

Analyte	Result	PQL	SPK value	SPK Ref Val	% Rec	Low Limit	High Limit	RPD Ref Val	% RPD	RPD Limit	Qual
4-Isopropyltoluene	20.03	1.5	20.00		100%	70	130	21.47	7%	20	
Methylene chloride	18.95	3.0	20.00		95%	70	130	19.23	1%	20	
4-Methyl-2-pentanone	24.44	5.0	20.00		122%	70	130	22.34	9%	20	
Methyl tert-butyl ether	21.10	2.0	20.00		106%	70	130	20.55	3%	20	
Naphthalene	22.97	5.0	20.00		115%	66	139	22.76	1%	25	
n-Propylbenzene	20.53	2.0	20.00		103%	70	130	21.57	5%	20	
Styrene	19.84	1.0	20.00		99%	70	130	20.09	1%	20	
1,1,1,2-Tetrachloroethane	19.62	0.50	20.00		98%	70	130	19.66	0%	20	
1,1,2,2-Tetrachloroethane	22.12	0.50	20.00		111%	70	130	21.34	4%	20	
Tetrachloroethene	18.29	0.50	20.00		91%	70	130	19	4%	20	
Toluene	19.74	3.0	20.00		99%	70	130	20.27	3%	20	
1,2,3-Trichlorobenzene	21.97	5.0	20.00		110%	66	143	23.27	6%	20	
1,2,4-Trichlorobenzene	19.58	5.0	20.00		98%	69	133	20.84	6%	20	
1,1,1-Trichloroethane	18.30	0.50	20.00		92%	70	130	19.12	4%	20	
1,1,2-Trichloroethane	20.30	0.50	20.00		102%	70	130	20.35	0%	20	
Trichloroethene	18.96	0.50	20.00		95%	70	130	19.63	3%	20	
Trichlorofluoromethane	19.51	2.0	20.00		98%	72	138	20.31	4%	20	
1,2,3-Trichloropropane	21.17	1.0	20.00		106%	70	130	20.4	4%	20	
1,2,4-Trimethylbenzene	19.56	2.0	20.00		98%	70	130	20.32	4%	20	
1,3,5-Trimethylbenzene	19.89	1.5	20.00		99%	70	130	21.24	7%	20	
Vinyl acetate	24.51	5.0	20.00		123%	56	164	24.39	0%	22	
Vinyl chloride	22.60	0.50	20.00		113%	63	134	23.37	3%	20	
Xylenes, Total	58.87	3.0	60.00		98%	70	130	60.62	3%	20	
4-Bromofluorobenzene	49.19	N/A	50.00		98%	70	130				
Dibromofluoromethane	52.60	N/A	50.00		105%	70	130				
1,2-Dichloroethane-d4	52.17	N/A	50.00		104%	70	130				
Toluene-d8	51.28	N/A	50.00		103%	70	130				

TRANSWEST GEOCHEM

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Project: 35 E Toole Ave/206100

QC SUMMARY REPORT

Blank Spike

Sample ID: LCS 6/15 | Batch ID: GCMS_T_070618A | Test Code: SW8260B | Units: mg/Kg | Date Analyzed: 06/18/07 10:38 | Date Prepared: 6/15/07

Analyte	Result	PQL	SPK value	SPK Ref Val	% Rec	Low Limit	High Limit	RPD Ref Val	% RPD	RPD Limit	Qual
Acetone	2.129	1.5	2.000		106%	45	152				
Benzene	0.8860	0.050	1.000		89%	70	130				
Bromobenzene	0.8455	0.25	1.000		85%	70	130				
Bromochloromethane	0.9725	0.050	1.000		97%	70	130				
Bromodichloromethane	0.9175	0.050	1.000		92%	70	130				
Bromoform	0.8415	0.10	1.000		84%	70	130				
Bromomethane	0.8790	0.50	1.000		88%	51	147				
2-Butanone	1.638	0.50	2.000		82%	47	131				
n-Butylbenzene	0.8440	0.25	1.000		84%	70	130				
sec-Butylbenzene	0.8395	0.25	1.000		84%	70	130				
tert-Butylbenzene	0.8685	0.25	1.000		87%	70	130				
Carbon disulfide	2.065	0.50	2.000		103%	45	127				
Carbon tetrachloride	0.9880	0.050	1.000		99%	70	130				
Chlorobenzene	0.8580	0.050	1.000		86%	70	130				
Dibromochloromethane	0.8775	0.050	1.000		88%	70	130				
Chloroethane	0.8820	0.50	1.000		88%	54	138				
Chloroform	0.9515	0.050	1.000		95%	70	130				
Chloromethane	0.6200	0.50	1.000		62%	28	149				
2-Chlorotoluene	0.8195	0.25	1.000		82%	70	130				
4-Chlorotoluene	0.8350	0.25	1.000		84%	70	130				
1,2-Dibromo-3-chloropropane	0.8535	0.50	1.000		85%	70	130				
1,2-Dibromoethane	0.8620	0.50	1.000		86%	70	130				
Dibromomethane	0.8880	0.25	1.000		89%	70	130				
1,2-Dichlorobenzene	0.8390	0.050	1.000		84%	70	130				
1,3-Dichlorobenzene	0.8560	0.050	1.000		86%	70	130				
1,4-Dichlorobenzene	0.8505	0.050	1.000		85%	70	130				
Dichlorodifluoromethane	0.4155	0.40	1.000		42%	13	153				
1,1-Dichloroethane	0.9455	0.050	1.000		95%	66	130				
1,2-Dichloroethane	0.9780	0.050	1.000		98%	70	130				
1,1-Dichloroethene	0.9135	0.10	1.000		91%	59	130				
cis-1,2-Dichloroethene	0.9040	0.050	1.000		90%	70	130				
trans-1,2-Dichloroethene	0.8950	0.050	1.000		90%	63	123				
1,2-Dichloropropane	0.8810	0.050	1.000		88%	70	130				
1,3-Dichloropropane	0.8280	0.25	1.000		83%	70	130				
2,2-Dichloropropane	1.027	0.25	1.000		103%	60	139				
1,1-Dichloropropene	0.9005	0.25	1.000		90%	70	130				
cis-1,3-Dichloropropene	0.9440	0.050	1.000		94%	70	130				
trans-1,3-Dichloropropene	0.8925	0.050	1.000		89%	70	130				
Ethylbenzene	0.8350	0.10	1.000		84%	70	130				
Hexachlorobutadiene	0.9175	0.50	1.000		92%	70	130				
2-Hexanone	1.616	0.50	2.000		81%	70	130				
Iodomethane	1.872	0.50	2.000		94%	41	124				
Isopropylbenzene	0.8640	0.25	1.000		86%	70	130				

TRANSWEST GEOCHEM

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Work Order: 0706280

Project: 35 E Toole Ave/206100

QC SUMMARY REPORT

Blank Spike

Analyte	Result	PQL	SPK value	SPK Ref Val	% Rec	Low Limit	High Limit	RPD Ref Val	% RPD	RPD Limit	Qual
4-Isopropyltoluene	0.8795	0.25	1.000		88%	70	130				
Methylene chloride	0.9225	0.50	1.000		92%	54	140				
4-Methyl-2-pentanone	1.639	0.50	2.000		82%	70	130				
Methyl tert-butyl ether	1.766	0.25	2.000		88%	68	139				
Naphthalene	0.8150	0.25	1.000		81%	68	131				
n-Propylbenzene	0.8150	0.25	1.000		81%	70	130				
Styrene	0.8590	0.25	1.000		86%	70	130				
1,1,1,2-Tetrachloroethane	0.9335	0.25	1.000		93%	70	130				
1,1,2,2-Tetrachloroethane	0.8360	0.10	1.000		84%	70	130				
Tetrachloroethene	0.8835	0.050	1.000		88%	70	130				
Toluene	0.8480	0.10	1.000		85%	70	130				
1,2,3-Trichlorobenzene	0.8500	0.25	1.000		85%	64	133				
1,2,4-Trichlorobenzene	0.8610	0.25	1.000		86%	70	130				
1,1,1-Trichloroethane	0.9830	0.050	1.000		98%	70	130				
1,1,2-Trichloroethane	0.8145	0.050	1.000		81%	70	130				
Trichloroethene	0.9180	0.050	1.000		92%	70	130				
Trichlorofluoromethane	0.9305	0.50	1.000		93%	49	135				
1,2,3-Trichloropropane	0.8710	0.25	1.000		87%	70	130				
1,2,4-Trimethylbenzene	0.8740	0.25	1.000		87%	70	130				
1,3,5-Trimethylbenzene	0.8765	0.25	1.000		88%	70	130				
Vinyl acetate	2.113	0.50	2.000		106%	41	142				
Vinyl chloride	0.9040	0.50	1.000		90%	37	148				
Xylenes, Total	2.5815	0.15	3.000		86%	70	130				
4-Bromofluorobenzene	2.248	N/A	2.500		90%	59	131				
1,2-Dichloroethane-d4	2.449	N/A	2.500		98%	63	123				
Dibromofluoromethane	2.559	N/A	2.500		102%	63	123				
Toluene-d8	2.323	N/A	2.500		93%	64	120				

TRANSWEST GEOCHEM

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CLIENT: Environmental & Engineering Consultants, I
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QC SUMMARY REPORT

Blank Spike Duplicate

Analyte	Result	PQL	SPK value	SPK Ref Val	% Rec	Low Limit	High Limit	RPD Ref Val	% RPD	RPD Limit	Qual
Sample ID: **LCSD 6/15**	Batch ID: GCMS_T_070618A			Test Code: SW8260B				Date Analyzed: 06/18/07 11:22			
				Units: mg/Kg				Date Prepared: 6/15/07			
Acetone	2.578	1.5	2.000		129%	45	152	2.129	19%	34	
Benzene	0.8815	0.050	1.000		88%	70	130	0.886	1%	20	
Bromobenzene	0.8155	0.25	1.000		82%	70	130	0.8455	4%	20	
Bromochloromethane	0.9540	0.050	1.000		95%	70	130	0.9725	2%	23	
Bromodichloromethane	0.8940	0.050	1.000		89%	70	130	0.9175	3%	20	
Bromoform	0.7965	0.10	1.000		80%	70	130	0.8415	5%	20	
Bromomethane	0.9565	0.50	1.000		96%	51	147	0.879	8%	30	
2-Butanone	1.723	0.50	2.000		86%	47	131	1.638	5%	31	
n-Butylbenzene	0.8485	0.25	1.000		85%	70	130	0.844	1%	20	
sec-Butylbenzene	0.8455	0.25	1.000		85%	70	130	0.8395	1%	20	
tert-Butylbenzene	0.8540	0.25	1.000		85%	70	130	0.8685	2%	20	
Carbon disulfide	2.016	0.50	2.000		101%	45	127	2.065	2%	25	
Carbon tetrachloride	0.9800	0.050	1.000		98%	70	130	0.988	1%	20	
Chlorobenzene	0.8395	0.050	1.000		84%	70	130	0.858	2%	20	
Dibromochloromethane	0.8450	0.050	1.000		85%	70	130	0.8775	4%	20	
Chloroethane	0.8515	0.50	1.000		85%	54	138	0.882	4%	28	
Chloroform	0.9370	0.050	1.000		94%	70	130	0.9515	2%	20	
Chloromethane	0.6115	0.50	1.000		61%	28	149	0.62	1%	30	
2-Chlorotoluene	0.8135	0.25	1.000		81%	70	130	0.8195	1%	21	
4-Chlorotoluene	0.8310	0.25	1.000		83%	70	130	0.835	0%	20	
1,2-Dibromo-3-chloropropane	0.8230	0.50	1.000		82%	70	130	0.8535	4%	20	
1,2-Dibromoethane	0.8320	0.50	1.000		83%	70	130	0.862	4%	20	
Dibromomethane	0.8735	0.25	1.000		87%	70	130	0.888	2%	20	
1,2-Dichlorobenzene	0.8300	0.050	1.000		83%	70	130	0.839	1%	20	
1,3-Dichlorobenzene	0.8420	0.050	1.000		84%	70	130	0.856	2%	20	
1,4-Dichlorobenzene	0.8405	0.050	1.000		84%	70	130	0.8505	1%	20	
Dichlorodifluoromethane	0.3855	0.35	1.000		39%	13	153	0.4155	7%	27	
1,1-Dichloroethane	0.9190	0.050	1.000		92%	66	130	0.9455	3%	20	
1,2-Dichloroethane	0.9675	0.050	1.000		97%	70	130	0.978	1%	20	
1,1-Dichloroethene	0.9090	0.10	1.000		91%	59	130	0.9135	0%	25	
cis-1,2-Dichloroethene	0.8850	0.050	1.000		89%	70	130	0.904	2%	20	
trans-1,2-Dichloroethene	0.8755	0.050	1.000		88%	63	123	0.895	2%	20	
1,2-Dichloropropane	0.8740	0.050	1.000		87%	70	130	0.881	1%	20	
1,3-Dichloropropane	0.7935	0.25	1.000		79%	70	130	0.828	4%	20	
2,2-Dichloropropane	0.9705	0.25	1.000		97%	60	139	1.027	6%	20	
1,1-Dichloropropene	0.8910	0.25	1.000		89%	70	130	0.9005	1%	20	
cis-1,3-Dichloropropene	0.9210	0.050	1.000		92%	70	130	0.944	2%	20	
trans-1,3-Dichloropropene	0.8360	0.050	1.000		84%	70	130	0.8925	7%	20	
Ethylbenzene	0.8385	0.10	1.000		84%	70	130	0.835	0%	20	
Hexachlorobutadiene	0.9275	0.50	1.000		93%	70	130	0.9175	1%	20	
2-Hexanone	1.555	0.50	2.000		78%	70	130	1.616	4%	21	
Iodomethane	1.822	0.50	2.000		91%	41	124	1.872	3%	26	
Isopropylbenzene	0.8605	0.25	1.000		86%	70	130	0.864	0%	20	

TRANSWEST GEOCHEM

Date: 02-Jul-07

License No. AZM133/AZ0133

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Project: 35 E Toole Ave/206100

QC SUMMARY REPORT

Blank Spike Duplicate

Analyte	Result	PQL	SPK value	SPK Ref Val	% Rec	Low Limit	High Limit	RPD Ref Val	% RPD	RPD Limit	Qual
4-Isopropyltoluene	0.8805	0.25	1.000		88%	70	130	0.8795	0%	20	
Methylene chloride	0.8610	0.50	1.000		86%	54	140	0.9225	7%	26	
4-Methyl-2-pentanone	1.686	0.50	2.000		84%	70	130	1.639	3%	23	
Methyl tert-butyl ether	1.635	0.25	2.000		82%	68	139	1.766	8%	20	
Naphthalene	0.8145	0.25	1.000		81%	68	131	0.815	0%	22	
n-Propylbenzene	0.8145	0.25	1.000		81%	70	130	0.815	0%	20	
Styrene	0.8455	0.25	1.000		85%	70	130	0.859	2%	20	
1,1,1,2-Tetrachloroethane	0.8995	0.25	1.000		90%	70	130	0.9335	4%	20	
1,1,2,2-Tetrachloroethane	0.8050	0.10	1.000		81%	70	130	0.836	4%	20	
Tetrachloroethene	0.8935	0.050	1.000		89%	70	130	0.8835	1%	20	
Toluene	0.8350	0.10	1.000		84%	70	130	0.848	2%	20	
1,2,3-Trichlorobenzene	0.8375	0.25	1.000		84%	64	133	0.85	1%	24	
1,2,4-Trichlorobenzene	0.8640	0.25	1.000		86%	70	130	0.861	0%	20	
1,1,1-Trichloroethane	0.9735	0.050	1.000		97%	70	130	0.983	1%	20	
1,1,2-Trichloroethane	0.7960	0.050	1.000		80%	70	130	0.8145	2%	20	
Trichloroethene	0.9320	0.050	1.000		93%	70	130	0.918	2%	20	
Trichlorofluoromethane	0.8905	0.50	1.000		89%	49	135	0.9305	4%	28	
1,2,3-Trichloropropane	0.8695	0.25	1.000		87%	70	130	0.871	0%	20	
1,2,4-Trimethylbenzene	0.8540	0.25	1.000		85%	70	130	0.874	2%	20	
1,3,5-Trimethylbenzene	0.8630	0.25	1.000		86%	70	130	0.8765	2%	20	
Vinyl acetate	1.683	0.50	2.000		84%	41	142	2.113	23%	27	
Vinyl chloride	0.8515	0.50	1.000		85%	37	148	0.904	6%	30	
Xylenes, Total	2.555	0.15	3.000		85%	70	130	2.582	1%	20	
4-Bromofluorobenzene	2.171	N/A	2.500		87%	59	131				
1,2-Dichloroethane-d4	2.382	N/A	2.500		95%	63	123				
Dibromofluoromethane	2.482	N/A	2.500		99%	63	123				
Toluene-d8	2.314	N/A	2.500		93%	64	120				

Storage Location: S-35 U-2 Brass Encores

TRANSWEST GEOCHEM

Sample Receipt Checklist

Client Name: EEC

Date and Time Received: 6.15.07 1452

Work Order Number: 0706280

Checked by: CB

Checklist completed by: [signature] 6.15.07 (Signature / Date)

Logged In by: CB 6.15.07 (Initials / Date)

Matrix: soil water

Carrier Name: Client TGI ~~Express Jet~~

Reviewed by: JM 6-18-07 (Initials / Date)

				COMMENTS
Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑	
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	Temp: 5.1°	Sampled < 2hrs ☐
Water – VOA vials have zero headspace?	Yes ☑	No ☐	N/A ☐	
Water – pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	Checked by: _____
Water – Sulfides present in Cyanide samples?	Yes ☐	No ☐	N/A ☑	
Samples considered Drinking Water for metal analysis?	Yes ☐	No ☐	N/A ☑	

Client contacted: _____ Date contacted: _____ Person contacted: _____

Contacted by: _____ Regarding: _____

Corrective Action: _____

TRANSWEST GEOCHEM

3725 E. Atlanta Ave.
Phoenix, Arizona 85040
Phone: (602) 437-0330
Fax: (602) 437-0660

3860 S. Palo Verde Rd., Ste. 301
Tucson, Arizona 85714
Phone: (520) 573-1061
Fax: (520) 573-1063

Chain of Custody

TGI Work Order No: 0706280

Date 6/14/07 Page 1 of 1

Project Manager:	Kevin Pierce
Client Name:	EEC
Address:	4625 E. Fort Lowell
City, State, Zip:	Tucson, AZ 85712
Phone:	520-321-4625 Fax: 520-321-0333

Bill To:	City of Tucson Environmental Services
Company:	
Address:	100 N. Stone, 2nd Floor
City, State, Zip:	Tucson, AZ 85701
Phone:	520-791-5414 Fax:

P.O. No.:	206100
Project Name:	55 E Toole Ave
Project Number:	206100

SAMPLE RECEIPT

Temperature:	4.6°C	Ice:	
Received Intact:	Yes No N/A	Absent / Present	
Custody Seals:	Yes No N/A	Wet / Blue	
Total No. of Containers:	21	Sampled <2 hrs ago	

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Lab ID	No. of Containers	TPH, (8015AZR.1)	BTEX (8021B)	Volatile Organics GCMS (624/8260B)	SDWA Volatiles, (524.2)	Semi-Volatile Organics GCMS (625/8270)	Organochlorine Pesticides (608/8081)	PCB's, (8082)	PAH, EPA (8310)	8 RCRA Metals	Comments
Dup 1	Soil	6/14/07		01	1	✓		✓							LUST compliance samples. Require 48 hour extraction
CB-4-10'	Soil	6/14/07	0745	02	2	✓		✓					✓		
CB-4-20'	Soil	6/14/07	0800	03	2	✓		✓							
CB-4-40'	Soil	6/14/07	0932	04	2	✓		✓							
CB-4-50'	Soil	6/14/07	1010	05	2	✓		✓							
CB-5-30'	Soil	6/14/07	1405	06	2	✓		✓					✓		
Equip Blank	Water	6/14/07	1430	07	8	✓		✓					✓		
TRIP Blank				08	1			✓							

Relinquished by: (Signature)	(Print Name)	Received by: (Signature)	(Print Name)	Date / Time
1 Chad S. Hancock	Chad S. Hancock	Keith Kanola	Keith Kanola	6/14/07 15:47
2 Heri Collins	Heri Collins		Express It	6/15/07 11:00
3	Express It	TGI	Elizabeth Kortras	6/15/07 14:50

White copy to TGI, Yellow copy for final report, Pink copy to sampler

Revised: 3/6/06

APPENDIX 8

LABORATORY ANALYTICAL DATA VERIFICATION DOCUMENTATION

Project Name: 35 E. Toole Avenue Brownfields Grant ID BF-97975901
Laboratory Name: Transwest Geochem
Work Order Number and Analysis 0706280, VOCs and PAH
Verification Performed by : COT-ES Project Manager

DATA VERIFICATION FORM

Perform data verification on all sample data considered critical for site closure. Data verification will be performed by a chemist or other professional with validation or analytical laboratory experience who is approved by ADEQ. The professional should be familiar with the QC requirements specified for the analytical methods being reviewed. Data verification precedes data validation and is a systematic process for evaluating whether data has been generated with acceptable quality control, as defined in the Project QAPP.

Review only the items listed below, as well as completeness of supporting documentation. This is a cursory review of the laboratory's quality control and may suggest that a more thorough validation is needed.

WO# 0706280

Notes:	Review Item
Yes. Anomalies and deficiencies reported with standard data flags. Corrective Action initiated at the Lab and no further corrective action needed	Case Narrative Have any anomalies, deficiencies, or QC problems been identified in the case narrative? What corrective action, if any, was taken?
Yes	Chain-of-Custody Documentation Are the original Chain-of-custody forms, with ID numbers and laboratory receipt signatures, present?
Yes	Are there copies of the internal tracking documents, as applicable?
Yes	Sample Analysis Results Are sample analysis results included for environmental samples, with quantitation limits (include dilutions and reanalysis)?
Yes	QC Summary Is the following information included? Initial and continuing calibrations
Yes	Method blanks, continuing calibration blanks, and preparation blanks
Yes	Surrogate percent recoveries
Yes	Matrix spike percent recoveries
Yes	Laboratory duplicate relative percent differences
Yes	Laboratory QC check sample, laboratory control samples
Sample CB-5-30 was duplicated as DUP-1 The relative percent difference between the two samples does not 35%.	Field Duplicate, if identified, reproducibility will be evaluated
Yes	Acceptance criteria, if not already established by the method/DQO
Yes	Definitions for any laboratory data qualifiers used
Not applicable	Method of standard additions (INORGANIC)

Project Name: 35 E. Toole Avenue Brownfields Grant ID BF-97975901
Laboratory Name: Transwest Geochem
Work Order Number and Analysis 0706280, VOCs and PAH
Verification Performed by : COT-ES Project Manager

Not applicable	ICP serial dilution (INORGANIC)
Yes	Specifically review the following: Was a check for timeliness and errors conducted, including requested deliverables, preservation, holding times, and Chain-of –Custody?
Yes	Was a duplicate sample/matrix spike/ matrix spike duplicate/postdigest spike reviewed against precision and accuracy criteria specified by the method or by project DQOs?
Yes, except dry weights, and calculations are performed by the laboratory and are not reported to the client for verification.	Were compound quantitation and reported detection limits reviewed, checking reporting limits against contract required limits, verifying dry weights, calculations, and dilutions?
Yes.	Does the Verification Report include the following information?: Case narrative including, but not limited to, an overall summary of data acceptability and comparison to DQOs and DQIs (PARCC), a list of recommended changes, a summary of all laboratory contracts, in which communications with the laboratory, if any, would be identified, and any other problems associated with the actual analysis which might impact the sample integrity of data quality.
Not Applicable	Marking of recommended changes directly on copies of the laboratory reports for the client's ease in performing data entry
Yes	Tabulated summary of all data results supplied electronically by email or on 3.5-inch floppy disk in a commonly used software format.