

July 15, 2003

Mr. David Weiss  
AAA Truck & Van Parts  
3884 Depot Road  
Hayward, CA 94545

**RECEIVED**

10:35 am, Sep 08, 2009

Alameda County  
Environmental Health

Project No.  
**5403.3.002.01**

Subject: AAA Truck & Van Parts  
3884 Depot Road  
Hayward, California

## **GROUNDWATER MONITORING WELL INSTALLATION**

- References:
1. Alameda County Environmental Health Services; Groundwater Monitoring Wells for 3884 Depot Road, Hayward, California; February 11, 2002
  2. ENGEO Inc.; Work Plan for the Installation of Groundwater Monitoring Wells, AAA Truck & Van Parts, 3884 Depot Road, Hayward, California; March 27, 2002.
  3. Alameda County Environmental Health Services; Work Plan Approval for 3884 Depot Road, Hayward, California; September 4, 2002.

Dear Mr. Weiss:

ENGEO Incorporated is pleased to present this report which provides details of well construction and groundwater sampling activities for three groundwater monitoring wells on the subject property in Hayward, California (Figure 1). The work was performed at the request of the Alameda County Environmental Health Department (ACEHD) in the letter dated February 11, 2002 (Reference 1). The scope of services included:

- Observation of the drilling and construction of three 20-foot deep, two-inch-diameter groundwater monitoring wells.
- Recovery of soil samples during drilling with organic vapor screening.
- Observation of the development of the three monitoring wells.
- Laboratory analysis of soil and groundwater samples collected at the time of the well construction.

## MONITORING WELL INSTALLATION AND DEVELOPMENT

Activities associated with the installation of the three monitoring wells were conducted on December 16 and 30, 2002. The well locations are shown on Figure 2. Weather conditions during the first day of drilling included rain showers with periods of heavy rain. Weather conditions on December 30<sup>th</sup> were overcast with occasional rain showers. Pondered water was observed on portions of the site due to continuing rains.

Prior to beginning the drilling activities, well permits were obtained from the Alameda County Public Works Department (ACPWD). Copies of the ACPWD well permits are included in Appendix B. Based on anticipated shallow depth to groundwater, ACPWD approved a 5-foot thick sanitary seal. The well boreholes were drilled to a depth of 20 feet by Gregg Drilling & Testing, Inc. (Gregg), based in Martinez, California. Work was performed in general conformance with the work plan (Reference 2) and the Alameda County work plan approval letter (Reference 3).

Monitoring Wells MW-1 and MW-2 were installed on December 16, 2002, using a Mobil B-61 drill rig. The location of MW-3 was inaccessible on December 16 due to soft soil conditions. Monitoring Well MW-3 was installed on December 30, 2002, with the use of a tracked Rhino (Marl M5T). The three bore holes were advanced using 8-inch-diameter hollow stem auger. Drilling was performed under the direction of an environmental geologist and logged in accordance with the Unified Soil Classification System.

Geologic logging of the soil boring samples and auger cuttings found approximately 2¼-feet to 2¾-feet of a gravelly fill, overlying an approximately 4-foot thick clay layer. Soil consisting of varying percentages of silts, clays, and sands were observed beneath the clay layer. Groundwater was encountered at approximately 8 to 9 feet below the ground surface at the time of drilling for borings B-2 (MW-2) and B-3 (MW-3). Boring B-1 (MW-1) was inundated from the start of drilling by the saturated granular surface fill. Boring log information including soil descriptions and field PID screenings are included Appendix C.

The monitoring wells were constructed using a 2-inch-diameter Schedule 40 PVC casing with flush threaded couplings. The lower 15 feet of casing consisted of 0.010-inch slotted pipe with the upper ±5 feet consisting of solid casing. The wells were backfilled with #2/16 sand to the top of the screened interval. A 12-inch-thick seal of bentonite chips was placed on top of the sand filter pack. The remaining annular space was backfilled with a cement/bentonite grout. Each well casing was capped using a locking waterproof plug and was covered by a flush-mounted 12-inch-diameter manhole. Following completion of field activities, a Well Completion Report was prepared in accordance with Department of Resources (DWR) regulations. The DWR Well Completion Report and monitoring well construction details are included Appendix C.

After the cement/bentonite grout had set for at least 72 hours, Gregg personnel developed the wells using a surge block and bailer. At least 50 gallons of groundwater, approximately 20 well casing volumes, were removed from each of the three wells during the development process.

## SOIL AND GROUNDWATER SAMPLING

Soil samples and auger cuttings were recovered during the well installation and were screened in the field using a Thermo Electron 580A photoionization detector (PID) to measure volatile compounds relative to the calibration standard (Isobutylene 100 ppm). Low concentrations (<10 parts per million) of volatile compounds were detected in B-1 and B-3, with no volatile compounds detected in B-2. Soil samples were submitted from the 7-foot to 7½-foot depth interval for laboratory analysis.

Water samples were recovered from the monitoring wells on January 23, 2003. Prior to sampling, the static groundwater level, pH, total dissolved solids, conductivity, and temperature were recorded for each of the wells. This information is recorded on the groundwater sampling forms that are included in Appendix D.

The groundwater samples were collected for laboratory testing using dedicated polyethylene bailers. The samples were decanted into pre-cleaned laboratory glassware and cooled in an ice chest until delivery under documented chain-of-custody to McCampbell Analytical, Inc., in Pacheco, California. Copies of the groundwater sampling forms and the well data summary are presented in Appendix D. Soil and groundwater sampling protocols are included in Appendix E.

## LABORATORY ANALYSIS

Laboratory testing was performed by McCampbell Analytical, Inc., a State licensed analytical laboratory located in Pacheco, California. The scope of laboratory testing was outlined in the ENGEO work plan (Reference 2) and ACEHD work plan approval letter (Reference 3). The requested analysis and test methods for the soil and groundwater samples are presented in Table I:

TABLE I  
Sample Analysis Test Methods

Test	EPA Method Number
TPH Gasoline (TPHg),	EPA 8015M / 8021B
TPH Diesel (TPHd)	EPA 3550 / 8015M
TPH Motor Oil (TPHmo)	EPA 3550 / 8015M
Volatile Organic Compounds (VOCs) ("Standard list" comprised of 67 compounds)	EPA 8260B
Oil and Grease	EPA 1664
Metals (LUFT heavy metals)	EPA 6010B

Based on the identified presence of naturally occurring organic compounds reported in a previous site characterization, a silica gel cleanup was performed on the oil and grease fraction prior to analysis. Filtering for the metals samples was performed by the analytical laboratory.

The laboratory analysis report for the soil samples is summarized in Tables II and III and in Tables IV and V for the groundwater samples.

TABLE II  
 Soil Sample Analysis Summary for Organic Compounds  
 (Concentrations reported in parts per million)

Sample Number	Sample Interval <sup>1</sup>	TPHg	TPH d/mo	Benzene / Toluene	Ethylbenzene	Xylenes / MtBE	Cumulative VOCs	Petroleum O&G
1-2	7.0 – 7.5	27 <sup>2,3</sup>	27 <sup>4,5</sup> / 21	ND <sup>6</sup> / 0.012	0.025	0.041 / 0.010	0.491	ND
2-2	7.0 – 7.5	ND	ND / ND	ND / ND	ND	ND / ND	ND	ND
3-2	7.0 – 7.5	ND	ND / ND	ND / ND	ND	ND / ND	ND	ND

1. Sample interval depth as measured from the ground surface.
2. Strongly aged gasoline or diesel range compounds are significant.
3. No recognizable pattern.
4. Oil range compounds are significant.
5. Stoddard solvent / mineral oil.
6. ND: Non detect; concentration below laboratory reporting limit.

Selected soil samples recovered from the three borings were submitted to the testing laboratory for analysis with one sample submitted from each of the three borings. The three samples were reported by the laboratory to contain petroleum oil and grease concentrations below the laboratory reporting limits. Soil samples recovered from B-2 and B-3 were also documented to contain concentrations of gasoline, diesel and motor oil range petroleum hydrocarbons and VOCs below the laboratory reporting limits.

The analytical laboratory report for the organic compounds detected the presence of an aged gasoline/diesel fraction and 11 volatile organic compounds for boring B-1 sample 1-2. The analytical laboratory report detected the presence of an aged gasoline/ diesel fraction at a concentration of 27 parts per million (ppm). Eleven VOCs were reported above the laboratory detection limit for soil sample 1-2 analysis, including the common gasoline constituents Toluene, Ethylbenzene, Xylenes, and MtBE reported at concentrations of 12 parts per billion (ppb), 25 ppb, 41 ppb, and 10 ppb, respectively. The concentration of four VOC compounds, Naphthalene, 1,2,4-Trimethylbenzene, n-Butyl Benzene, and n-Propyl Benzene, were reported above 50 ppb at 150 ppb, 74, 61, and 55 ppb, respectively. Three volatile organic compounds whose concentrations were listed as below 50 ppb and not typical of gasoline fuel components were also identified in the VOC analysis. These VOCs are 1,3,5-Trimethylbenzene at 30 ppb, sec-Butyl Benzene at 20 ppb, and Isopropylbenzene at 13 ppb.

TABLE III  
 Soil Sample Analysis for LUFT Metals  
 (Concentrations reported in parts per million)

Sample Number	Sample Interval <sup>1</sup>	Cadmium Cd	Chromium Cr	Lead Pb	Nickel Ni	Zinc Zn
1-2	7.0 – 7.5	ND <sup>2</sup>	30	12	32	64
2-2	7.0 – 7.5	ND	40	8.8	51	55
3-2	7.0 – 7.5	ND	23	4.8	34	36

1. Sample interval depth as measured from the ground surface.
2. ND: Non detect; concentration below laboratory reporting limit.

The reported metal concentrations for the soil samples ranged from 23 ppm to 40 ppm for Chromium, 4.8 ppm to 12 ppm for Lead, 32 ppm to 51 ppm for Nickel, and 36 ppm to 64 ppm for Zinc.

TABLE IV  
 Groundwater Sample Analysis Summary for Organic Compounds  
 (Concentrations reported in parts per billion)

Well Number	Water Elevation <sup>1</sup>	TPHg	TPH d/mo	Benzene / Toluene	Ethyl Benzene	Xylenes / MtBE	Cumulative VOCs	Petroleum O&G
MW-1	5.75	ND <sup>2</sup>	76 <sup>3</sup> / ND	ND / ND	ND	ND / 71	71	ND
MW-2	3.54	ND	ND / ND	ND / ND	ND	ND / 1.3	1.3	ND
MW-3	4.80	ND	53 <sup>3</sup> / ND	ND / ND	ND	ND / ND	ND	ND

1. Water elevation as feet above mean sea level.
2. ND: Non detect; concentration below laboratory reporting limit.
3. Aged diesel? is significant.

TABLE V  
Groundwater Sample Analysis for LUFT Metals  
(concentrations reported in parts per billion)

Well Number	Water Elevation <sup>1</sup>	Cadmium Cd	Chromium Cr	Lead Pb	Nickel Ni	Zinc Zn
MW-1	5.75	ND <sup>2</sup>	ND	ND	ND	ND
MW-2	3.54	ND	ND	ND	ND	ND
MW-3	4.80	ND	ND	ND	ND	ND

1. Sample interval depth as measured from the ground surface.
2. ND: Non detect; concentration below laboratory reporting limit.

As shown in Table IV detectable concentrations of diesel range petroleum hydrocarbons were reported in the groundwater for monitoring wells MW-1 and MW-3. The diesel range hydrocarbon concentrations are reported at 76 ppb for well MW-1 and 53 ppb for well MW-3. Methyl tertiary Butyl Ether (MtBE) was the only VOC reported above detection limits, with concentrations reported in wells MW-1 and MW-2 at 71 ppb and 1.3 ppb, respectively.

Concentrations of gasoline range and motor oil range petroleum hydrocarbons, petroleum oil and grease (Table IV) and LUFT metals (Table V) were below the laboratory detection limits. Laboratory procedures are included in Appendix E and a copy of the McCampbell Analytical Report is presented in Appendix F.

## DISCUSSION

Detectable concentrations of diesel range petroleum hydrocarbons were reported in the groundwater sampled from monitoring wells, MW-1 and MW-3, at concentrations of 76 ppb and 53 ppb, respectively. A single volatile organic compound, MtBE, was detected out of the 67 target VOCs. The levels of MtBE in the groundwater were documented above laboratory reporting limits at wells, MW-1 and MW-2, at concentrations of 71 ppb and 1.3 ppm, respectively. Concentrations of gasoline and motor oil range petroleum hydrocarbons, petroleum oil and grease, VOCs with the exception of MtBE, and dissolved LUFT metals are reported below laboratory detection limits for the three water samples.

The reported MtBE concentration for MW-1 is above the 13 ppb State of California Maximum Contaminant Level (MCL) primary drinking water standard. Neither primary nor secondary MCLs have been established for diesel range petroleum hydrocarbons.

Direction of groundwater flow has been calculated to be toward the northwest at a gradient of 0.0135 (Figure 2). In accordance with the workplan, the monitoring wells are scheduled to be

Mr. David Weiss  
AAA Truck & Van Parts  
GROUNDWATER MONITORING WELL INSTALLATION

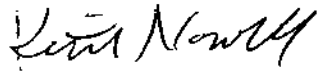
5403.3.002.01  
July 15, 2003  
Page 7

sampled on a quarterly basis through the course of one year. The next scheduled sampling event is in October 2003.

A copy of this report should be provided to Ms. Eva Chu, Alameda County Environmental Health Services. We appreciate the opportunity to be of continued service to you on this project. If you have any questions, please contact our office.

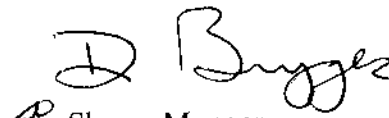
Very truly yours,

ENGEIO INCORPORATED



Keith Nowell  
Staff Geologist  
kn/cc:well

Reviewed by:



Shawn Munger  
CHG 413

Attachments: Appendix A – Site Maps  
Appendix B -- Permits – Alameda County Public Works  
Appendix C – Well Completion Reports  
Appendix D – Groundwater Well Installation Data  
Appendix E – Procedures and Protocols  
Appendix F – McCampbell Analytical Report

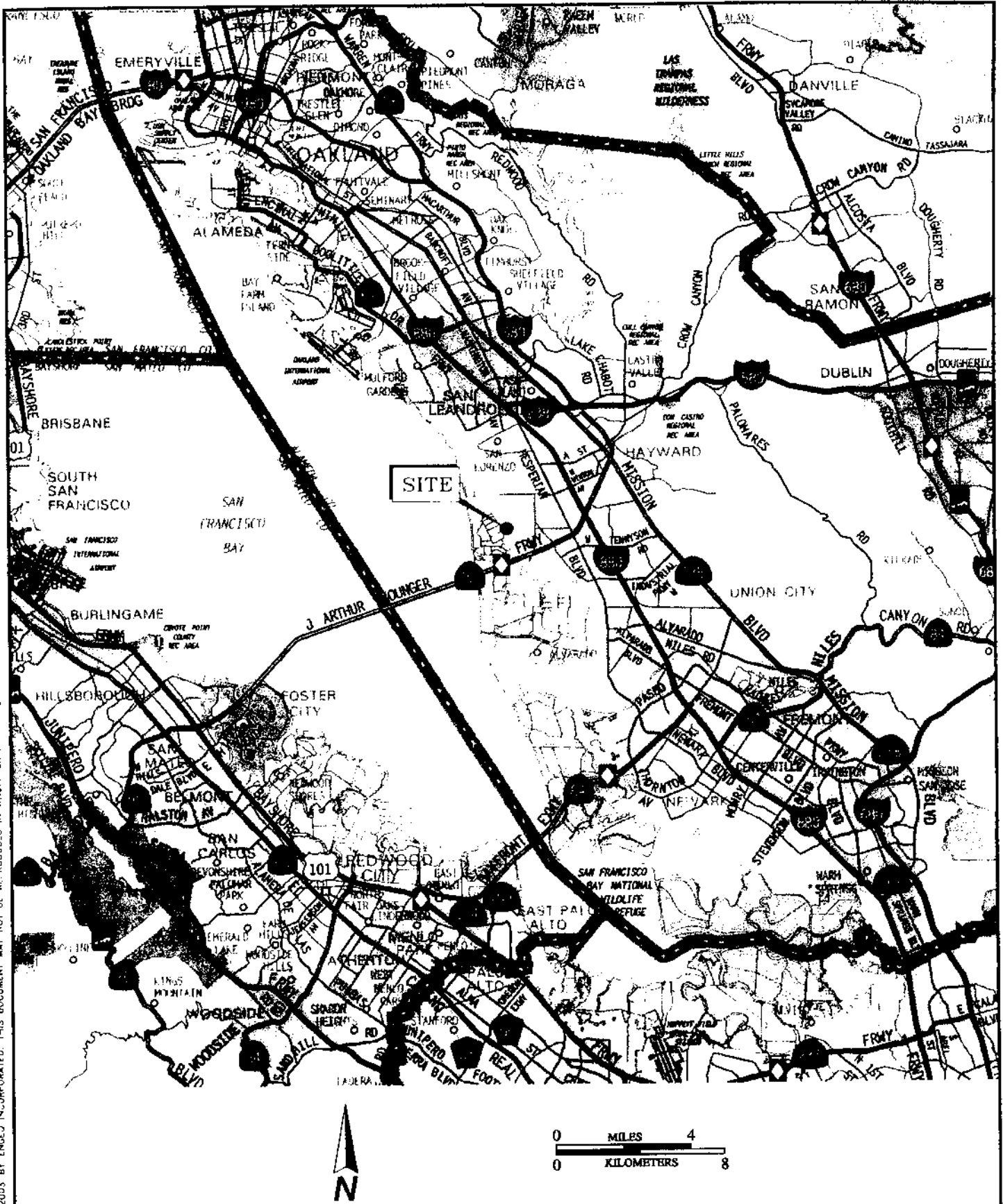
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**APPENDIX A**

Figure 1	Site Location Map
Figure 2	Site Map Showing Well Locations

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BASE MAP SOURCE: THOMAS BROTHERS

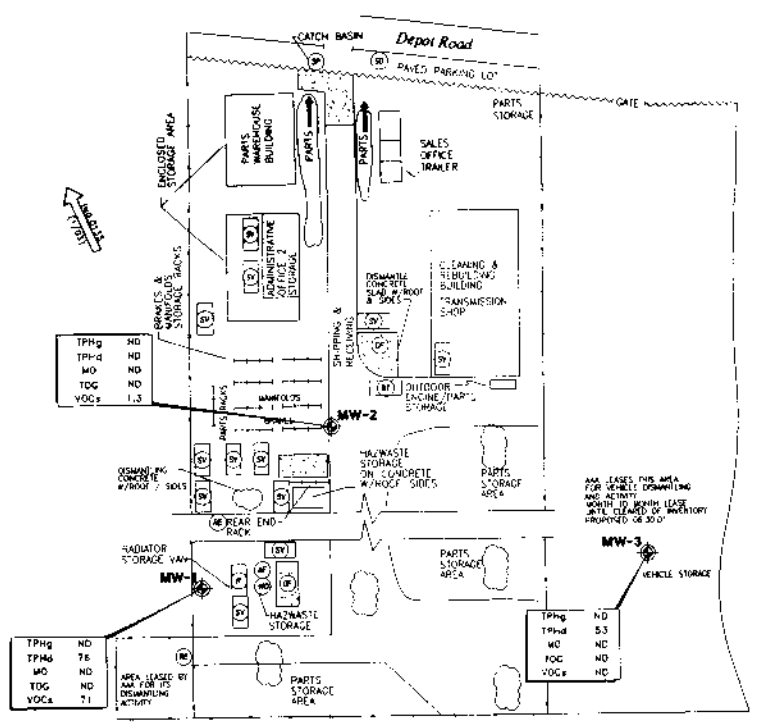
**ENGEIO**  
 INCORPORATED  
 EXCELLENT SERVICE SINCE 1971

**SITE VICINITY MAP**  
 AAA TRUCK AND VAN PARTS  
 HAYWARD, CALIFORNIA

PROJECT NO: 5403.1.002.01	FIGURE NO. <b>1</b>
DATE: JULY 2003	
DRAWN BY: DLB	CHECKED BY: [Signature]

ORIGINAL FIGURE PRINTED IN COLOR

Copyright © 2002 by ENGEO Environmental Services, Inc. All rights reserved. This drawing may not be reproduced in whole or in part by any means whatsoever, nor may it be used for any purpose other than that for which it was prepared.



**EXPLANATION**

- MW-3** APPROXIMATE LOCATION OF MONITORING WELL (INSTALLED DECEMBER 2002)
- TPH<sub>g</sub> GASOLINE RANGE HYDROCARBONS
- TPH<sub>d</sub> DIESEL RANGE HYDROCARBONS
- MO MOTOR OIL RANGE HYDROCARBONS
- TOG TOTAL OIL AND GREASE
- VOCs CUMULATIVE VOLATILE ORGANIC COMPOUNDS REP
- ND ANALYTE CONCENTRATION BELOW LABORATORY PI (CONCENTRATIONS REPORTED IN PARTS PER BILLION UNLESS OTHERWISE NOTED)

TPH <sub>g</sub>	ND
TPH <sub>d</sub>	ND
MO	ND
TOG	ND
VOCs	1.3

TPH <sub>g</sub>	ND
TPH <sub>d</sub>	7E
MO	ND
TOG	ND
VOCs	7.1

TPH <sub>g</sub>	ND
TPH <sub>d</sub>	5.5
MO	ND
TOG	ND
VOCs	ND



BASE PLAN SOURCE: WEST ENVIRONMENTAL SERVICES

**ENGEO** H. CORPORATION  
 SITE PLAN SHOWING MONITORING WELL LOCATIONS  
 AAA TRUCK AND VAN PARTS  
 HAYWARD, CALIFORNIA

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**APPENDIX B**

PERMITS

Alameda County Public Works Department  
Well Permits



# ALAMEDA COUNTY PUBLIC WORKS AGENCY

**WATER RESOURCES SECTION**  
399 ELMHURST ST. HAYWARD CA. 94544-1395  
PHONE (415) 670-6633 Janet Yoo  
FAX (415) 782-1939

APPLICANTS PLEASE ATTACH A SITE MAP FOR ALL DRILLING PERMIT APPLICATIONS  
DESTRUCTION OF WELLS OVER 45 FEET REQUIRES A SEPARATE PERMIT APPLICATION

## DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

FOR OFFICE USE

LOCATION OF PROJECT  
AAA Truck Parts  
3894 Dept Road  
Hayward CA 94545

PERMIT NUMBER W02-1019  
WELL NUMBER \_\_\_\_\_  
APN \_\_\_\_\_

CLIENT  
Name David Weis / AAA Truck  
Address 3894 Dept Rd. Phone 510/782-9433  
City Hayward Zip 94545

APPLICANT  
Name ENGEO Inc  
Keith Newell Fax 925/838-7425  
Address 2401 Central Ex Rd Phone 425/838-1600  
City San Ramon Zip 94562

TYPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection	<input type="checkbox"/>	General	<input type="checkbox"/>
Water Supply	<input type="checkbox"/>	Contamination	<input type="checkbox"/>
Monitoring	<input checked="" type="checkbox"/>	Well Destruction	<input type="checkbox"/>

PROPOSED WATER SUPPLY WELL USE

New Domestic	<input type="checkbox"/>	Replacement Domestic	<input type="checkbox"/>
Municipal	<input type="checkbox"/>	Irrigation	<input type="checkbox"/>
Industrial	<input type="checkbox"/>	Other	<input type="checkbox"/>

DRILLING METHOD:

Mud Rotary	<input type="checkbox"/>	Air Rotary	<input type="checkbox"/>	Auger	<input checked="" type="checkbox"/>
Cable	<input type="checkbox"/>	Other	<input type="checkbox"/>		

DRILLER'S NAME Eregg Drilling  
DRILLER'S LICENSE NO. C57 485165

WELL PROJECTS

Drill Hole Diameter	<u>8</u> in.	Maximum	
Casing Diameter	<u>2</u> in.	Depth	<u>20</u> ft.
Surface Seal Depth	<u>5</u> ft.	Owner's Well Number	<u>MW-1</u>

GEOTECHNICAL PROJECTS

Number of Borings		Maximum	
Hole Diameter		Depth	

ESTIMATED STARTING DATE 10-23-02 12-16-02  
ESTIMATED COMPLETION DATE 10-23-02 12-16-02

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE Keith Newell DATE 10-17-02

PLEASE PRINT NAME Keith Newell Rev.5-13-00

### PERMIT CONDITIONS

Circled Permit Requirements Apply

#### A. GENERAL

1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
2. Submit to ACPWA within 60 days after completion of permitted original Department of Water Resources-Well Completion Report.
3. Permit is void if project not begun within 90 days of approval date.

#### B. WATER SUPPLY WELLS

1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic well irrigation wells unless a lesser depth is specially approved.

#### C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS

1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

#### D. GEOTECHNICAL

Backfill bore hole by tremie with cement grout or cement grout and mixture. Upper two-thirds feet replaced in kind or with compacted cuttings.

#### E. CATHODIC

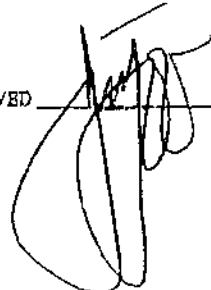
Fill hole annule zone with concrete placed by tremie.

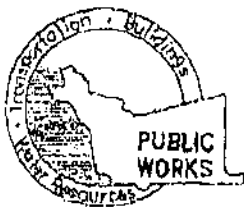
#### F. WELL DESTRUCTION

Send a map of work site. A separate permit is required for wells deeper than 45 feet.

#### G. SPECIAL CONDITIONS

NOTE: One application must be submitted for each well or well destruction. Multiple borings on one application are acceptable for geotechnical and contamination investigations.

APPROVED  DATE 10-17-02



# ALAMEDA COUNTY PUBLIC WORKS AGENCY

**WATER RESOURCES SECTION**  
399 ELMHURST ST. HAYWARD CA. 94544-1395  
PHONE (510) 670-6633 Janice Yee  
FAX (510) 782-1939

APPLICANTS: PLEASE ATTACH A SITE MAP FOR ALL DRILLING PERMIT APPLICATIONS  
DESTRUCTION OF WELLS OVER 45 FEET REQUIRES A SEPARATE PERMIT APPLICATION

## DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

FOR OFFICE USE

LOCATION OF PROJECT  
AAA Truck Parts  
3884 Depot Rd  
Hayward CA 94545

PERMIT NUMBER W22-1020  
WELL NUMBER \_\_\_\_\_  
APN \_\_\_\_\_

CLIENT  
Name David Weiss / AAA Trucks  
Address 3884 Depot Rd Phone 510/782-9433  
City Hayward Zip 94545

PERMIT CONDITIONS  
Circled Permit Requirements: Apply

### A. GENERAL

1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
2. Submit to ACPWA within 60 days after completion of permitted original Department of Water Resources-Well Completion Report.
3. Permit is void if project not begun within 90 days of approval date.

APPLICANT  
Name ENGEO Inc  
- Keith Maxwell Fax 925/838-7425  
Address 2401 Chabota Rd Phone 925/839-1608  
City San Ramon Zip 94562

### B. WATER SUPPLY WELLS

1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.

TYPE OF PROJECT

Well Construction	<input type="checkbox"/>	Geotechnical Investigation	<input type="checkbox"/>
Cathodic Protection	<input type="checkbox"/>	General	<input type="checkbox"/>
Water Supply	<input type="checkbox"/>	Contamination	<input type="checkbox"/>
Monitoring	<input checked="" type="checkbox"/>	Well Destruction	<input type="checkbox"/>

### C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS

1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

PROPOSED WATER SUPPLY WELL USE

New Domestic	<input type="checkbox"/>	Replacement Domestic	<input type="checkbox"/>
Municipal	<input type="checkbox"/>	Irrigation	<input type="checkbox"/>
Industrial	<input type="checkbox"/>	Other	<input type="checkbox"/>

### D. GEOTECHNICAL

Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with computered cuttings.

DRILLING METHOD:

Mod Rotary	<input type="checkbox"/>	Air Rotary	<input type="checkbox"/>	Auger	<input checked="" type="checkbox"/>
Cable	<input type="checkbox"/>	Other	<input type="checkbox"/>		

### E. CATHODIC

Fill hole anode zone with anodes placed by tremie.

DRILLER'S NAME Engo Drilling

### F. WELL DESTRUCTION

Send a map of work site. A separate permit is required for wells deeper than 45 feet.

DRILLER'S LICENSE NO C57 985195

### G. SPECIAL CONDITIONS

WELL PROJECTS

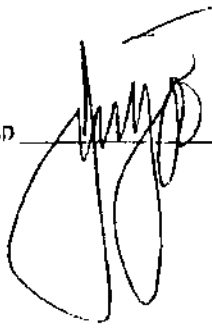
Drill Hole Diameter	<u>8</u> in.	Maximum	
Casing Diameter	<u>2</u> in.	Depth	<u>20</u> ft.
Surface Seal Depth	<u>5</u> ft.	Owner's Well Number	<u>MW-2</u>

NOTE: One application must be submitted for each well or well destruction. Multiple borings on one application are acceptable for geotechnical and contamination investigations.

GEOTECHNICAL PROJECTS

Number of Borings	_____	Maximum	_____ ft.
Hole Diameter	_____ in.	Depth	_____ ft.

ESTIMATED STARTING DATE 10-23-02 12-16-02  
ESTIMATED COMPLETION DATE 10-23-02 12-16-02

APPROVED  DATE 10-21-02

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE Keith Maxwell DATE 10-17-02

PLEASE PRINT NAME \_\_\_\_\_ Rev. 5-13-00



# ALAMEDA COUNTY PUBLIC WORKS AGENCY

## WATER RESOURCES SECTION

399 ELMHURST ST. HAYWARD CA. 94544-1395  
PHONE (510) 670-5633 James Yoo  
FAX (510) 782-1939

APPLICANTS: PLEASE ATTACH A SITE MAP FOR ALL DRILLING PERMIT APPLICATIONS  
DESTRUCTION OF WELLS OVER 45 FEET REQUIRES A SEPARATE PERMIT APPLICATION

### DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

FOR OFFICE USE

LOCATION OF PROJECT  
AAA Truck Parts  
3804 Depot Road  
Hayward CA 94545

PERMIT NUMBER W02-1021  
WELL NUMBER \_\_\_\_\_  
APN \_\_\_\_\_

CLIENT  
Name David Weis / AAA Truck  
Address 3804 Depot Rd Phone 510/782-9433  
City Hayward Zip 94545

APPLICANT  
Name ENGEEO Inc  
Keith Nowell Fax 925/838-7425  
Address 2401 Chaboya Rd Phone 925/838-1608  
City San Ramon Zip 94562

TYPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection	<input type="checkbox"/>	General	<input type="checkbox"/>
Water Supply	<input type="checkbox"/>	Contamination	<input type="checkbox"/>
Monitoring	<input checked="" type="checkbox"/>	Well Destruction	<input type="checkbox"/>

PROPOSED WATER SUPPLY WELL USE

New Domestic	<input type="checkbox"/>	Replacement Domestic	<input type="checkbox"/>
Municipal	<input type="checkbox"/>	Irrigation	<input type="checkbox"/>
Industrial	<input type="checkbox"/>	Other	<input type="checkbox"/>

DRILLING METHOD:

Mud Rotary	<input type="checkbox"/>	Air Rotary	<input type="checkbox"/>	Auger	<input checked="" type="checkbox"/>
Cable	<input type="checkbox"/>	Other	<input type="checkbox"/>		

DRILLER'S NAME Cregg Drilling  
DRILLER'S LICENSE NO. C57 985165

WELL PROJECTS

Drill Hole Diameter	<u>8</u> in.	Maximum	
Casing Diameter	<u>2</u> in.	Depth	<u>20</u> ft.
Surface Seal Depth	<u>0.5</u> ft.	Owner's Well Number	<u>MW-3</u>

GEOTECHNICAL PROJECTS

Number of Borings		Maximum	
Hole Diameter		Depth	

ESTIMATED STARTING DATE 10-23-02 12-16-02  
ESTIMATED COMPLETION DATE 10-23-02 12-16-02

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE Keith Nowell DATE 10-17-02

PLEASE PRINT NAME Keith Nowell Rev. 5-13-00

### PERMIT CONDITIONS

Circled Permit Requirements Apply

#### A. GENERAL

1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
2. Submit to ACPWA within 60 days after completion of permitted original Department of Water Resources-Well Completion Report.
3. Permit is void if project not begun within 90 days of approval date.

#### B. WATER SUPPLY WELLS

1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 30 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.

#### C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS

1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

#### D. GEOTECHNICAL

Backfill bore hole by tremie with cement grout or cement grout and mixture. Upper two-three feet replaced in kind or with compacted cuttings.

#### E. CATHODIC

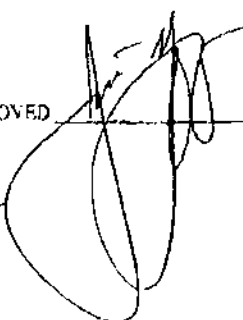
Fill hole anode zone with concrete placed by tremie.

#### F. WELL DESTRUCTION

Send a map of work site. A separate permit is required for wells deeper than 45 feet.

#### G. SPECIAL CONDITIONS

NOTE: One application must be submitted for each well or well destruction. Multiple borings on one application are acceptable for geotechnical and contamination investigations.

APPROVED  DATE 10-21-02






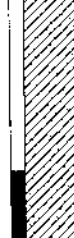


A  
P  
P  
E  
N  
D  
I  
X  
  
C

**APPENDIX C**

DEPARTMENT OF WATER RESOURCES  
Well Completion Reports  
(To be included after signatures are recorded)

Well Borelogs  
Well Construction Diagrams  
Department of Water Resources 188 Rev 11-97 Forms

DEPTH (FEET)	DEPTH (METERS)	SAMPLE NUMBER	LOG, LOCATION AND TYPE OF SAMPLE	DATE OF BORING: December 16, 2002	BLOWS/FT	OVM	IN PLACE	
				SURFACE ELEVATION: Approx. 9 feet (3 meters)		READING P.I.D. (10 0eV)	DRY UNIT WEIGHT	MOIST. CONTENT
DESCRIPTION				(Parts Per Million By Volume)		(PCF)	% DRY WEIGHT	
0				CLAYEY SANDY GRAVEL (GP-GC), dark grayish brown, wet, becoming saturated, gravels to 3 inches maximum dimension, subangular to subrounded, trace wood fragment and metal parts. (FILL)				
1		1-1		SILTY CLAY (CH), dark grayish brown, stiff, very moist to wet, organic matter, common, organic odor.	15	6.9		
5								
2		1-2		SILTY fine to medium sand (SM), grayish brown, saturated, loose.  Same as above, with coarsening sand.	10	<1		
10								
3		1-3		SILTY CLAY (CL), gray, very stiff, very moist.	29	<1		
4								
15				SANDY SILTY CLAY (CL), very moist				
14		1-4		CLAYEY GRAVEL with sand (GC), very moist, gravels to 1 inch maximum diameter, subrounded.		<1		
5								
20				CLAYEY fine to medium sand (SC), yellowish brown, very moist, loose to medium dense  Same as above, with fine-grained sand.				
20		1-5			16	<1		
7				Bottom of boring at approximately 21 1/2 feet at 10:58 Groundwater level at 0.3 feet upon completion of drilling.				
25								
8								
9								
30								





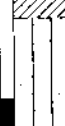

ENVIRO-OVM 5403100101 AAA TRUCK & VAN PARTS-OVM/GPJ R6603  
 1973-2000 \* 27 YEARS OF EXCELLENCE



AAA TRUCK AND VAN PARTS  
 HAYWARD, CALIFORNIA

BORING NO.: MW-1  
 LOGGED BY: K. Nowell  
 PROJ. NO.: 5403.1.001.01  
CHECKED BY  
*SM*

FIGURE NO.  
**C1**

DEPTH (FEET)	DEPTH (METERS)	SAMPLE NUMBER	LOG LOCATION AND TYPE OF SAMPLE	DATE OF BORING: December 16, 2002		BLOWS/FT	OVM READING P.L.D. (10.0eV)	IN PLACE	
				SURFACE ELEVATION. Approx. 10 feet (3 meters)				DRY UNIT WEIGHT (PCF)	MOIST. CONTENT (% DRY WEIGHT)
DESCRIPTION						(Parts Per Million By Volume)			
0				SILTY SANDY GRAVEL (GP-SM), wet, trace metal parts. (FILL)			<1		
1		2-1		SILTY CLAY (CH), very dark grayish brown, stiff to very stiff, very moist.	24		<1		
5		2-2		SILTY CLAY (CL-CH), dark grayish brown, very stiff, very moist.	15		<1		
10		2-3		SILTY SAND with fine gravel (SM), dark grayish brown, sand is fine to coarse, gravels to 1/4 inch maximum dimension, subangular, saturated.	14		<1		
15		2-4		SILTY CLAY (CL), mottled very dark grayish brown/grayish brown/white, stiff, very moist, locally abundant carbonates	18		<1		
20		2-8		SILTY fine SAND (SM), dark grayish brown, saturated, medium dense.					
21				Very SILTY CLAY (CL), yellowish brown, very stiff, wet.	30		<1		
21.5				Bottom of boring at approximately 21 1/2 feet at 12:45. Groundwater at 8.8 feet upon completion of drilling.					

ENVIRO-QVM 5403100101 AAA TRUCK & VAN PARTS-QVM GPJ 8/6/03



AAA TRUCK AND VAN PARTS  
HAYWARD, CALIFORNIA

BORING NO.: MW-2

LOGGED BY: K Nowell







PROJ. NO.: 5403.1.001.01

FIGURE NO.

C2

DATE

8/7

DEPTH (FEET)	DEPTH (METERS)	SAMPLE NUMBER	LOG, LOCATION AND TYPE OF SAMPLE	DATE OF BORING: December 16, 2002		BLOWS/FT	OVM READING P.I.D. (10.0eV)	IN PLACE	
				SURFACE ELEVATION: Approx. 10 feet (3 meters)				DRY UNIT WEIGHT  (PCF)	MOIST. CONTENT  % DRY WEIGHT
DESCRIPTION						(Parts Per Million By Volume)			
0				CLAYEY GRAVEL (GC), very dark grayish brown, with fine to coarse sand, and gravel is fine to coarse, wet to saturated. (FILL)					
1		3-1		SILTY CLAY (CH), very dark brown, stiff, very moist, abundant organic material.  Same as above, dark grayish brown.			1.9		
2		3-2		SILTY SANDY CLAY, (CL), dark grayish brown, very moist, sand is predominantly coarse grained, trace chunk carbonates.			2.3		
3		3-3		SILTY SANDY CLAY (CL) mottled grayish brown/dark yellowish brown, stiff, very moist, sand is predominantly fine grained, minor carbonates.			3.1		
4		3-4		CLAYEY fine SAND (SC), yellowish brown, very moist, loose to medium dense.			1.2		
5		3-5		Bottom of boring at approximately 20 1/2 feet at 10:50. Groundwater at 7.8 feet upon completion of drilling.			<1		

ENVIRO-OVM 5403100101 AAA TRUCK & VAN PARTS-OVM.GPJ 8/6/05



AAA TRUCK AND VAN PARTS  
 HAYWARD, CALIFORNIA

BORING NO.: MW-3  
 LOGGED BY: K Nowell  
 PROJ. NO.: 5403.1.001.01

FIGURE NO.  
**C3**  
CHECKED BY: 8/27

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BORING/WELL NO. MW-1

# MONITORING WELL DETAIL

PROJECT NUMBER 5403.1.001.01

DATE OF INSTALLATION 12/16/02

PROJECT NAME AAA TRUCK & VAN PARTS

TOP OF CASING ELEV. 8.86'

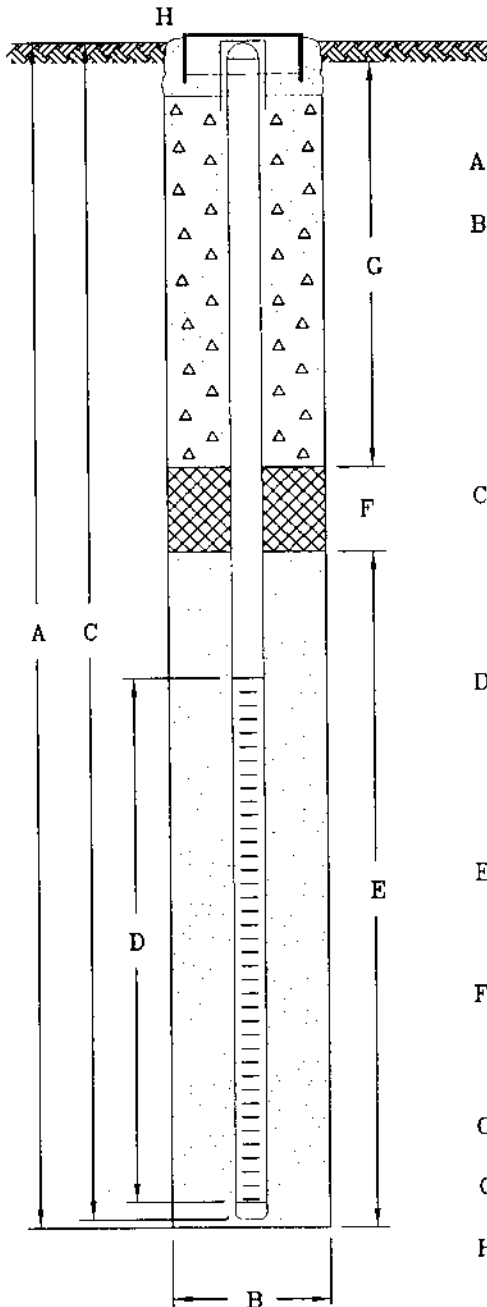
COUNTY ALAMEDA

GROUND SURFACE ELEV. 9.25'

WELL PERMIT NO. M 01-1107

DATUM MONUMENT AT 3898 DEPOT RD.

CITY OF HAYWARD DATA



## EXPLORATORY BORING

A. TOTAL DEPTH 21.5 FT.

B. DIAMETER 8 IN.

DRILLING METHOD CONTINUOUS FLIGHT HOLLOW STEM AUGER

## WELL CONSTRUCTION

C. CASING LENGTH 20 FT.

MATERIAL SCH 40 PVC

DIAMETER 2 IN.

D. SLOTTED INTERVAL LENGTH 15 FT.

SLOTTED INTERVAL FROM 5 TO 20 FT.

SLOT SIZE 0.010 IN.

E. FILTER PACK INTERVAL 4.75 TO 20 FT.

FILTER MATERIAL MONTEREY #2/16 SAND

F. FILTER PACK SEAL 3.75 TO 4.75 FT.

SEAL MATERIAL BENTONITE CHIPS

G. GROUT INTERVAL 0 TO 3.75 FT.

GROUT MATERIAL NEET CEMENT

H. 12-INCH FLUSH MOUNT MONUMENT

**ENGEO**  
INCORPORATED

BORING/WELL NO. MW-2

# MONITORING WELL DETAIL

PROJECT NUMBER 5403.1.001.01

DATE OF INSTALLATION 12/16/02

PROJECT NAME AAA TRUCK & VAN PARTS

TOP OF CASING ELEV. 9.80'

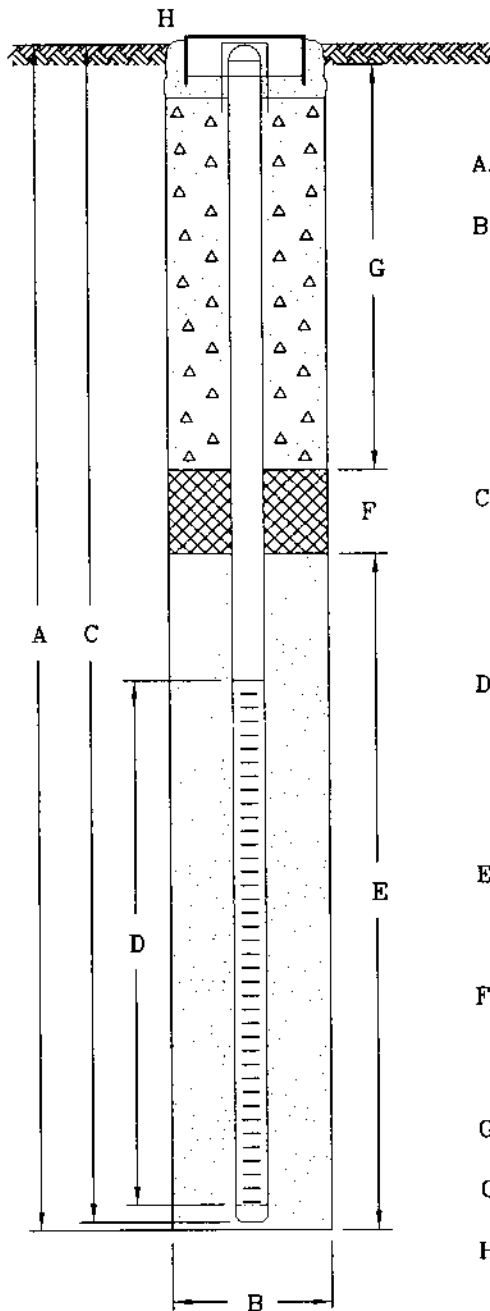
COUNTY ALAMEDA

GROUND SURFACE ELEV. 10.22'

WELL PERMIT NO. M 01-1107

DATUM MONUMENT AT 3898 DEPOT RD.

CITY OF HAYWARD DATA



## EXPLORATORY BORING

A. TOTAL DEPTH 21.5 FT.

B. DIAMETER 8 IN.

DRILLING METHOD CONTINUOUS FLIGHT HOLLOW STEM AUGER

## WELL CONSTRUCTION

C. CASING LENGTH 20 FT.

MATERIAL SCH 40 PVC

DIAMETER 2 IN.

D. SLOTTED INTERVAL LENGTH 15 FT.

SLOTTED INTERVAL FROM 5 TO 20 FT.

SLOT SIZE 0.010 IN.

E. FILTER PACK INTERVAL 4.75 TO 20 FT.

FILTER MATERIAL MONTEREY #2/16 SAND

F. FILTER PACK SEAL 3.75 TO 4.75 FT.

SEAL MATERIAL BENTONITE CHIPS

G. GROUT INTERVAL 0 TO 3.75 FT.

GROUT MATERIAL NEET CEMENT

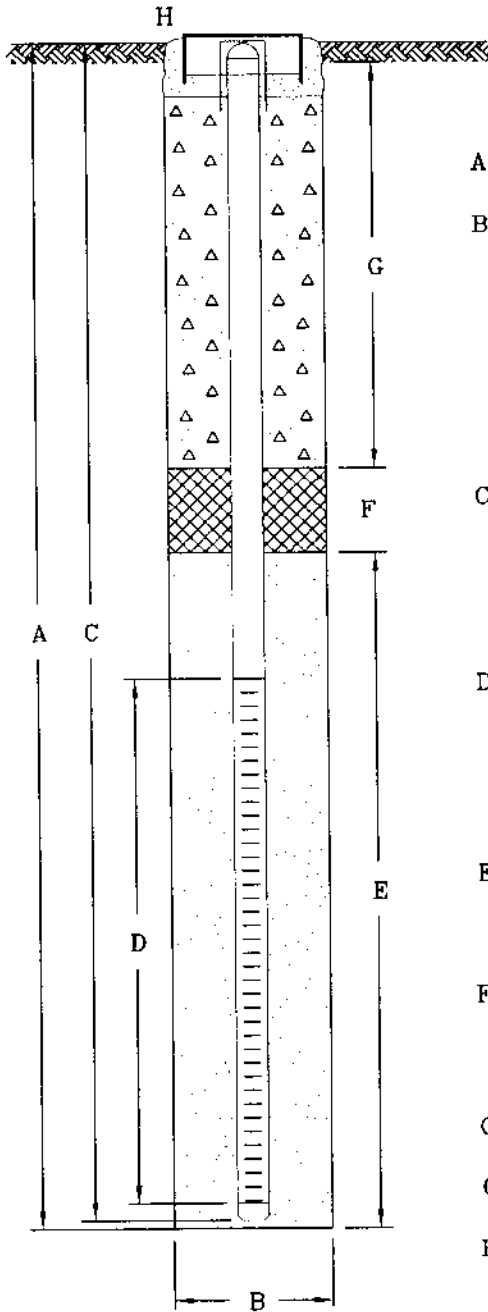
H. 12-INCH FLUSH MOUNT MONUMENT

**ENGEO**  
INCORPORATED

BORING/WELL NO. MW-3

# MONITORING WELL DETAIL

PROJECT NUMBER 5403.1.001.01 DATE OF INSTALLATION 12/30/02  
 PROJECT NAME AAA TRUCK & VAN PARTS TOP OF CASING ELEV. 9.52'  
 COUNTY ALAMEDA GROUND SURFACE ELEV. 9.78'  
 WELL PERMIT NO. M 01-1107 DATUM MONUMENT AT 3898 DEPOT RD.  
CITY OF HAYWARD DATA



## EXPLORATORY BORING

A. TOTAL DEPTH 20.5 FT.  
 B. DIAMETER 8 IN.  
 DRILLING METHOD CONTINUOUS FLIGHT HOLLOW STEM AUGER

## WELL CONSTRUCTION

C. CASING LENGTH 20 FT.  
 MATERIAL SCH 40 PVC  
 DIAMETER 2 IN.  
 D. SLOTTED INTERVAL LENGTH 15 FT.  
 SLOTTED INTERVAL FROM 5 TO 20 FT.  
 SLOT SIZE 0.010 IN.  
 E. FILTER PACK INTERVAL 4.75 TO 20 FT.  
 FILTER MATERIAL MONTEREY #2/16 SAND  
 F. FILTER PACK SEAL 3.75 TO 4.75 FT.  
 SEAL MATERIAL BENTONITE CHIPS  
 G. GROUT INTERVAL 0 TO 3.75 FT.  
 GROUT MATERIAL NEET CEMENT  
 H. 12-INCH FLUSH MOUNT MONUMENT

**ENGEO**  
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ORIGINAL  
File with DWR

Get new number

STATE OF CALIFORNIA  
**WELL COMPLETION REPORT**  
*Refer to Instruction Pamphlet*

DWR USE ONLY — DO NOT FILL IN

Page \_\_\_ of \_\_\_

Owner's Well No. MW-1

No. e005608

Date Work Began 12/16/02, Ended 12/16/02

Local Permit Agency Alameda County Public Works Agency

Permit No. W02-10-19 Permit Date 10-21-02

STATE WELL NO./STATION NO.	
LATITUDE	LONGITUDE
APN/TRS/OTHER	

**GEOLOGIC LOG**

**WELL OWNER**

ORIENTATION (°)  VERTICAL \_\_\_\_\_ HORIZONTAL \_\_\_\_\_ ANGLE \_\_\_\_\_ (SPECIFY)  
DRILLING METHOD \_\_\_\_\_ FLUID \_\_\_\_\_

Name David Weiss  
Mailing Address 3884 Depot Road  
Hayward CA 94545  
CITY STATE ZIP

DEPTH FROM SURFACE DESCRIPTION  
FL to FL Describe material, grain size, color, etc.

**WELL LOCATION**  
Address 3884 Depot Road  
City Hayward  
County Alameda  
APN Book \_\_\_\_\_ Page \_\_\_\_\_ Parcel \_\_\_\_\_  
Township \_\_\_\_\_ Range \_\_\_\_\_ Section \_\_\_\_\_  
Latitude 37 38 136 NORTH Longitude 122 08 052 WEST  
DEG. MIN. SEC. DEG. MIN. SEC.

See Attached

**LOCATION SKETCH**

WEST EAST SOUTH NORTH

Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. **PLEASE BE ACCURATE & COMPLETE.**

See Attached

**ACTIVITY (≤)**  
 NEW WELL  
MODIFICATION/REPAIR  
\_\_\_\_\_ Deepen  
\_\_\_\_\_ Other (Specify) \_\_\_\_\_  
DEstroy (Describe Procedures and Materials Under "GEOLOGIC LOG")  
**PLANNED USES (≤)**  
WATER SUPPLY  
\_\_\_\_\_ Domestic \_\_\_\_\_ Public  
\_\_\_\_\_ Irrigation \_\_\_\_\_ Industrial  
MONITORING  TEST WELL \_\_\_\_\_  
CATHODIC PROTECTION \_\_\_\_\_  
HEAT EXCHANGE \_\_\_\_\_  
DIRECT PUSH \_\_\_\_\_  
INJECTION \_\_\_\_\_  
VAPOR EXTRACTION \_\_\_\_\_  
SPARGING \_\_\_\_\_  
REMEDIATION \_\_\_\_\_  
OTHER (SPECIFY) \_\_\_\_\_

TOTAL DEPTH OF BORING \_\_\_\_\_ (Feet)  
TOTAL DEPTH OF COMPLETED WELL \_\_\_\_\_ (Feet)

**WATER LEVEL & YIELD OF COMPLETED WELL**  
DEPTH TO FIRST WATER NM (Ft.) BELOW SURFACE  
DEPTH OF STATIC WATER LEVEL 4.05 (Ft.) & DATE MEASURED 1/23/03  
ESTIMATED YIELD \_\_\_\_\_ (GPM) & TEST TYPE \_\_\_\_\_  
TEST LENGTH \_\_\_\_\_ (Hrs.) TOTAL DRAWDOWN \_\_\_\_\_ (Ft.)  
\* May not be representative of a well's long-term yield.

DEPTH FROM SURFACE	BORE-HOLE DIA. (Inches)	CASING (S)				MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
		TYPE (≤)							
Ft. to Ft.		BLANK	SCREEN	CONDUCTOR	FILL PIPE				

See Attached

DEPTH FROM SURFACE	ANNULAR MATERIAL TYPE			
	CE-MENT (≤)	BEN- TONITE (≤)	FILL (≤)	FILTER PACK (TYPE/SIZE)
Ft. to Ft.				

See Attached

**ATTACHMENTS (≤)**  
 Geologic Log  
 Well Construction Diagram  
\_\_\_\_\_ Geophysical Log(s)  
\_\_\_\_\_ Soil/Water Chemical Analyses  
 Other Site Plan  
ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

**CERTIFICATION STATEMENT**  
I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME \_\_\_\_\_  
(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

ADDRESS \_\_\_\_\_ CITY STATE ZIP

Signed \_\_\_\_\_ DATE SIGNED \_\_\_\_\_ C-57 LICENSE NUMBER \_\_\_\_\_  
WELL DRILLER/AUTHORIZED REPRESENTATIVE



ORIGINAL  
File with DWR  
Page 1 of 1

Get new number

STATE OF CALIFORNIA  
Refer to Instruction Pamphlet

# WELL COMPLETION REPORT

Owner's Well No. MW-3 No. e005610

Date Work Began 12-30-02 Ended 12-30-02

Local Permit Agency Alameda County Public Works Agency

Permit No. W02-1021 Permit Date 10-21-02

DWR USE ONLY — DO NOT FILL IN

STATE WELL NO./STATION NO.											
LATITUDE						LONGITUDE					
APN/TRS/OTHER											

DEPTH FROM SURFACE		FLUID	
Fl.	to Fl.		
		See Attached	

See Attached

Name <u>David Weiss</u>	
Mailing Address <u>3884 Depot Road</u> <u>Hayward, CA 94545</u>	
CITY	STATE ZIP
Address <u>3884 Depot Road</u>	
City <u>Hayward</u>	
County <u>Alameda</u>	
APN Book	Page
Township	
Range	
Section	
Latitude <u>37 38 137 NORTH</u>	Longitude <u>122 08 027 WEST</u>
DEG MIN SEC.	DEG MIN SEC.
LOCATION SKETCH NORTH	
See Attached	
WEST	EAST
SOUTH	
Activity ( $\checkmark$ ) <input checked="" type="checkbox"/> NEW WELL <input type="checkbox"/> MODIFICATION/REPAIR <input type="checkbox"/> Deepen <input type="checkbox"/> Other (Specify)	
<input type="checkbox"/> DESTROY (Describe Procedures and Materials Under 'GEOLOGIC LOG')	
Planned Uses ( $\checkmark$ )	
WATER SUPPLY	
<input type="checkbox"/> Domestic <input type="checkbox"/> Public	
<input type="checkbox"/> Irrigation <input type="checkbox"/> Industrial	
MONITORING <input checked="" type="checkbox"/> TEST WELL <input type="checkbox"/>	
CATHODIC PROTECTION <input type="checkbox"/>	
HEAT EXCHANGE <input type="checkbox"/>	
DIRECT PUSH <input type="checkbox"/>	
INJECTION <input type="checkbox"/>	
VAPOR EXTRACTION <input type="checkbox"/>	
SPARGING <input type="checkbox"/>	
REMEDATION <input type="checkbox"/>	
OTHER (SPECIFY) <input type="checkbox"/>	

See Attached

WEST

EAST

WEST

Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Awnings, etc. and attach a map. Use additional paper if necessary. PLEASE BE ACCURATE & COMPLETE.

## WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER 7.8 (Fl.) BELOW SURFACE  
DEPTH OF STATIC WATER LEVEL 4.72 (Fl.) & DATE MEASURED 1/23/03  
ESTIMATED YIELD (GPM) & TEST TYPE \_\_\_\_\_  
TEST LENGTH (Hrs.) TOTAL DRAWDOWN (Fl.) \_\_\_\_\_  
\* May not be representative of a well's long-term yield.

DEPTH FROM SURFACE	BORE-HOLE DIA. (Inches)	CASEING (S)					MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
		TYPE ( $\checkmark$ )								
Fl.	to Fl.	BLANK	SCREEN	CON. DUCTOR	FILL PIPE					

DEPTH FROM SURFACE	ANNULAR MATERIAL				
	TYPE				
Fl.	to Fl.	CE- MENT ( $\checkmark$ )	BEN- TONITE ( $\checkmark$ )	FILL ( $\checkmark$ )	FILTER PACK (TYPE/SIZE)

See Attached

See Attached

## ATTACHMENTS ( $\checkmark$ )

- Geologic Log
- Well Construction Diagram
- Geophysical Log(s)
- Soil/Water Chemical Analyses
- Other Site Plan

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS

## CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME \_\_\_\_\_  
(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

ADDRESS \_\_\_\_\_ CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

Signed \_\_\_\_\_ DATE SIGNED \_\_\_\_\_  
WELL DRILLER/AUTHORIZED REPRESENTATIVE

C-57 LICENSE NUMBER \_\_\_\_\_

A  
P  
P  
E  
N  
D  
I  
X  
  
D

**APPENDIX D**

GROUNDWATER WELL INSTALLATION DATA

Soil Sampling Forms  
Groundwater Monitoring Well Sampling Forms  
Groundwater Monitoring Well Data

**ENGEO INCORPORATED  
SOIL SAMPLING INFORMATION**

Job Name: AAA Truck & Van  
 Location1: 3884 Depot Road  
 Location2: Hayward, California  
 Client: D. Weiss

Job Number: 5403.3.002.01  
 Date: 12/16/2002  
 By: K. Nowell

**DRILLING INFORMATION**

Drilling Contractor: Gregg  
 Auger Type: Continuous flight  
 Hole Diameter: 8-inch

License No.: C-57 485165  
 Sampler Type: CA Modified 3-inch OD

**SAMPLING INFORMATION**

Decon Procedure: TSP: X  
Solvent:

Tap Water: X  
Acid:

Sample Number	Time	Size	Test	Comments
1- 1	10:40	2.5" x 6"	Hold	3 - 3.5-foot sample interval
1- 2	10:47	2.5" x 6"	TPH,VOC,TOG,LUFTm	7 - 7.5-foot sample interval
1- 3	10:52	2.5" x 6"	Hold	11 - 11.5-foot sample interval
1- 4	10:55	2.5" x 6"	Hold	15 - 15.5-foot sample interval
1- 5	10:58	2.5" x 6"	Hold	21 - 21.5-foot sample interval
2- 1	12:25	2.5" x 6"	Hold	4 - 4.5-foot sample interval
2- 2	12:30	2.5" x 6"	TPH,VOC,TOG,LUFTm	7 - 7.5-foot sample interval
2- 3	12:35	2.5" x 6"	Hold	11 - 11.5-foot sample interval
2- 4	12:40	2.5" x 6"	Hold	16 - 16.5-foot sample interval
2- 5	12:45	2.5" x 6"	Hold	21 - 21.5-foot sample interval
	---	---	---	---

**ENGEO INCORPORATED  
SOIL SAMPLING INFORMATION**

Job Name: <u>AAA Truck &amp; Van</u>	Job Number: <u>5403.3.002.01</u>
Location1: <u>3884 Depot Road</u>	Date: <u>12/30/2002</u>
Location2: <u>Hayward, California</u>	By: <u>K. Nowell</u>
Client: <u>D. Weiss</u>	

**DRILLING INFORMATION**

Drilling Contractor: <u>Gregg</u>	License No.: <u>C-57 485165</u>
Auger Type: <u>Continuous flight</u>	Sampler Type: <u>CA Modified 2-inch OD</u>
Hole Diameter: <u>8-inch</u>	

**SAMPLING INFORMATION**

Decon Procedure: <u>TSP: X</u>	Tap Water: <u>X</u>
<u>Solvent:</u>	<u>Acid:</u>

Sample Number	Time	Size	Test	Comments
3- 1	10:40	1.5" x 6"	Hold	3 - 3.5-foot sample interval
3- 2	10:47	1.5" x 6"	TPH,VOC,TOG,LUFTm	7 - 7.5-foot sample interval
3- 3	10:52	1.5" x 6"	Hold	11 - 11.5-foot sample interval
3- 4	10:55	1.5" x 6"	Hold	15 - 15.5-foot sample interval
3- 5	10:58	1.5" x 6"	Hold	20 - 20.5-foot sample interval
	---	---	---	---

**ENGEO INCORPORATED  
GROUNDWATER SAMPLING INFORMATION**

Job Name: AAATruck & Van Parts  
 Location: 3884 Depot Road  
Hayward, California  
 Client: AAATruck & Van Parts

Job Number: 5403.3.002.01  
 Date: 01/23/03  
 By: K. Nowell

**WELL INFORMATION**

Well Number: MW-1  
 Total Depth (ft.): 19.48 TOC  
 Depth to Water (ft.): 4.05 TOC

Casing Diameter (in.): 2.00  
 Screen Length (ft.): 15  
 Casing Volume (gal.): 2.7

**PURGING INFORMATION**

Bailer: X Pump: Rate:  
 Volume Removed (gal.): 12

Time (init./fin.): 14:44 / 15:20  
 Number of Casing Volumes: 4.5

Time	Volume Removed (Gal.)	Total Casing Volumes	Temperature (Degrees Centigrade)	Conductivity (micromohs)	pH	TDS (ppm)	Comments
14:44	---	---	---	---	---	---	Initial, no odor, no sheen
14:51	3.0	1.1	15.7	3420	6.7	≥999	Moderately turbid
15:00	6.0	2.2	15.7	3390	6.7	≥999	Moderately turbid
15:11	9.0	3.3	16.0	3350	6.7	≥999	Slightly turbid
15:20	12.0	4.5	15.9	3370	6.7	≥999	Slightly turbid
	---	---	---	---	---	---	

**SAMPLE INFORMATION**

Bailer: X Pump: \_\_\_\_\_  
 Decon Procedure: TSP  
 Disposable: X

Distilled Water: \_\_\_\_\_  
 Other: \_\_\_\_\_

Sample	Time	Size / Number	Preservative	Test	Comments
MW-1	15:25	40 ml 3	None	TPHg / VOCs	Slightly turbid
"	15:30	500 ml 1	None	Luft metals	Slightly turbid
"	15:35	1000 ml 3	None	TEPH / O&G	Slightly turbid



**ENGEO INCORPORATED  
GROUNDWATER SAMPLING INFORMATION**

Job Name: AAATruck & Van Parts  
 Location: 3884 Depot Road  
Hayward, California  
 Client: AAATruck & Van Parts

Job Number: 5403.3.002.01  
 Date: 01/23/03  
 By: K. Nowell

**WELL INFORMATION**

Well Number: MW-2  
 Total Depth (ft.): 19.44 TOC  
 Depth to Water (ft.): 5.32 TOC

Casing Diameter (in.): 2.00  
 Screen Length (ft.): 15  
 Casing Volume (gal.): 2.5

**PURGING INFORMATION**

Bailer: X Pump: \_\_\_\_\_ Rate: \_\_\_\_\_  
 Volume Removed (gal.): 10

Time (init./fin.): 13:13 / 13:39  
 Number of Casing Volumes: 4.1

Time	Volume Removed (Gal.)	Total Casing Volumes	Temperature (Degrees Centigrade)	Conductivity (micromohs)	pH	TDS (ppm)	Comments
13:13	---	---	---	---	---	---	Initial, no odor, no sheen
13:18	2.5	1.0	16.8	5000	6.6	≥999	Moderately turbid
13:25	5.0	2.0	16.8	5560	6.5	≥999	Moderately turbid
13:33	7.5	3.0	16.6	5650	6.5	≥999	Moderately turbid
13:39	10.0	4.1	16.7	5610	6.6	≥999	Slightly turbid
	---	---	---	---	---	---	

**SAMPLE INFORMATION**

Bailer: X Pump: \_\_\_\_\_  
 Decon Procedure: TSP  
 Disposable: X

Distilled Water: \_\_\_\_\_  
 Other: \_\_\_\_\_

Sample	Time	Size / Number	Preservative	Test	Comments
MW-2	13:45	40 ml / 3	None	TPHg / VOCs	Slightly turbid
"	13:50	500 ml / 1	None	Luft metals	Slightly turbid
"	13:55	1000 ml / 3	None	TEPH / O&G	Slightly turbid

**ENGEO INCORPORATED  
GROUNDWATER SAMPLING INFORMATION**

Job Name: AAATruck & Van Parts  
 Location: 3884 Depot Road  
Hayward, California  
 Client: AAATruck & Van Parts

Job Number: 5403.3.002.01  
 Date: 01/23/03  
 By: K. Nowell

**WELL INFORMATION**

Well Number: MW-3  
 Total Depth (ft.): 20.09 TOC  
 Depth to Water (ft.): 4.72 TOC

Casing Diameter (in.): 2.00  
 Screen Length (ft.): 15  
 Casing Volume (gal.): 2.7

**PURGING INFORMATION**

Bailer: X Pump: \_\_\_\_\_ Rate: \_\_\_\_\_  
 Volume Removed (gal.): 12

Time (init./fin.): 11:00 / 11:35  
 Number of Casing Volumes: 4.5

Time	Volume Removed (Gal.)	Total Casing Volumes	Temperature (Degrees Centigrade)	Conductivity (micromohs)	pH	TDS (ppm)	Comments
11:00	---	---	---	---	---	---	Initial, no odor, no sheen
11:08	3.0	1.1	16.8	2210	6.7	≥999	Turbid
11:18	6.0	2.2	16.7	2220	6.7	≥999	Turbid
11:26	9.0	3.4	16.9	2210	6.7	≥999	Moderately turbid
11:35	12.0	4.5	16.8	2210	6.7	≥999	Moderately turbid
	---	---	---	---	---	---	

**SAMPLE INFORMATION**

Bailer: X Pump: \_\_\_\_\_  
 Decon Procedure: TSP  
 Disposable: X

Distilled Water: \_\_\_\_\_  
 Other: \_\_\_\_\_

Sample	Time	Size / Number	Preservative	Test	Comments
MW-3	11:50	40 ml / 3	None	TPHg / VOCs	Moderately turbid
"	11:55	500 ml / 1	None	Luft metals	Moderately turbid
"	12:00	1000 ml / 3	None	TEPH / O&G	Moderately turbid

**ENGEO INCORPORATED  
GROUNDWATER MONITORING WELL DATA**

Project: AAATruck & Van Parts  
3884 Depot Road  
Location: Hayward, California

Project No: 5403.3.002.01  
Proj. Date: 1/23/2002

**GROUND-WATER GRADIENT CALCULATION**

Maximum Elevation (ft-msl) 5.75  
Minimum Elevation (ft-msl) 3.54  
Mid Elevation (ft-msl): 4.80  
Distance Max - Min (ft): 163  
Equipotential Point: 93  
(Feet From Min Point along Min-Max line)

Data based on wells MW 1, 2 & 3:  
Gradient, i: 0.0135  
(Vertical feet per linear foot, )  
Flow direction: North -northwest

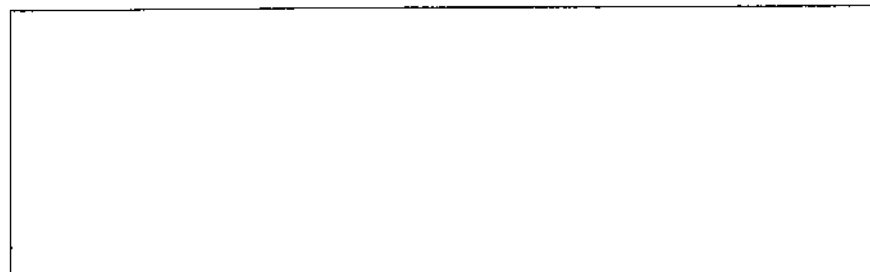
**WATER ELEVATION DATA**

WELL#	Vault Elevation (msl)	Casing Elevation (msl)	Casing Height (ft)	Depth to Water (tc/ft)	Water Elev (msl)	Water Depth (ft)
MW-1	10.22	9.80	0.42	4.05	5.75	4.47
MW-2	9.25	8.86	0.39	5.32	3.54	5.71
MW-3	9.78	9.52	0.26	4.72	4.80	4.98

**WELL CONSTRUCTION DETAILS**

WELL#	Installation Date	Boring Diameter (in)	Total Depth (ft)	Casing Diameter (in)	Top of Screen (bgl)	Top of Filter Pack (bgl)
MW-1	16-Dec-02	8.00	20.0	2.00	5.0	4.8
MW-2	16-Dec-02	8.00	20.0	2.00	5.0	4.8
MW-3	30-Dec-02	8.00	20.0	2.00	5.0	4.8

Distances			
Distances-- based on co-ordinates-- MW-1, MW-2, MW-3			
Well	X- coordinate	Y- coordinate	
MW-1	2,058,423	6,088,281	High well
MW-2	2,058,579	6,088,329	Low well
MW-3	2,058,588	6,088,528	Mid well
Distance between high and low wells		163.34	feet



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**APPENDIX E**

**PROCEDURES AND PROTOCOLS**

**Laboratory Procedures  
Groundwater Sampling Protocols  
Soil Sampling Protocols**

## GROUNDWATER SAMPLING PROTOCOL

### Equipment Cleaning

Ground-water samples are recovered in pre-cleaned disposable polyethylene or Teflon bailers. The samples are then placed in pre-cleaned laboratory supplied glassware. Sample bottles and caps remain sealed until actual usage at the site. Before and during use at the site, equipment which comes in contact with the well or ground water is thoroughly cleaned with trisodium phosphate or Alquinox and rinsed with deionized or distilled water. This procedure occurs between each sampling event. Monitoring wells are sampled in approximate order of increasing contamination.

Prior to field activities groundwater and field monitoring equipment are calibrated using the appropriate calibration standards.

### Water Level Measurements

Prior to checking for floating product, purging of the well and sampling, the depth to water is measured in each well using a sealed sounding tape or a sealed electric sounder. Water levels are recorded in the field to the nearest 0.01 foot from a common reference point on the well casing.

### Floating Product Thickness

A field check for floating product is made with a clean and clear acrylic or Teflon bailer. Thickness of floating product as well as odor and color of the water is recorded. A clean nylon or cotton cord is used in each well. The cords are replaced with new cords prior to the sampling event.

### Water Sampling Procedures

Prior to sampling of the groundwater, a minimum of four to ten well-casing volumes of water are removed from the well. The volume of water to be removed is calculated from the measurements of the water level, casing diameter, and the well depth. Water is removed by bailer, hand pump, or submersible electric pump. During purging, temperature, pH, dissolved solids, and oxidation-reduction potential are monitored for stabilization ( $\pm 10\%$ ). Turbidity of the water is also noted either qualitatively or by means of a NTU instrument. A water sample is collected using a clean disposable polyethylene bailer when the appropriate volume has been purged or when the parameters have stabilized and a minimum of four well-casings have been purged. If the well is dewatered during purging, the well is allowed to recover to 80 percent of the static water level prior to sampling. If recovery exceeds a

two-hour duration, the sample will be collected when a sufficient volume is available for the specific laboratory analyses.

### Collection of Samples

Groundwater samples are collected in the appropriately sized pre-cleaned laboratory containers. Samples for volatile organic analyses are recovered in 40-milliliter vials lined with a Teflon septum. The volatile organic samples are recovered with zero headspace to prevent the loss of volatile constituents.

Groundwater samples for metal analyses are either filtered in the field using a pressurized bailer system, or filtered in the analytical laboratory. Following filtering, the metal samples are acidified to  $\text{pH} < 2$  with  $\text{HNO}_3$  or  $\text{HCl}$ .

The water sample containers are labeled with the appropriate sample number, location, project name and number, time of collection and the date. Chain-of-custody forms are logged with the same information, signed and accompany the samples. Samples are placed in an iced cooler and transported to a state-certified analytical laboratory. Travel and equipment blanks are submitted on a project-specific basis to provide for laboratory and field QA/QC.

## SOIL SAMPLING PROTOCOL

### Soil Sampling by Drill Rig

Review and confirmation of the proposed boring locations and special instructions are discussed with the client prior to sampling. Underground Service Alert (USA) and/or private utility locators are contacted to mark utilities in the area before beginning the drilling activities.

Equipment used in drilling is steam cleaned prior to its arrival at the site. Equipment includes, but is not limited to, augers, bits, drilling rod, samplers and sample liners. The sampler is thoroughly cleaned with trisodium phosphate or Alquinox and rinsed with distilled water between sampling intervals.

Each exploratory boring is drilled with a truck-mounted drilling rig using either solid flight or hollow stem augers. The boring is advanced to the desired sampling depth and the sampler is then lowered to the bottom of the hole. The sampler is driven a maximum of 18 inches by a 140-pound, rig-operated hammer falling 30 inches. The number of blows required to drive the sampler the final 12 inches is recorded on the boring log.

The samplers commonly used are either a California-type sampler (3-inch or 2.5-inch) or a standard penetrometer (2-inch). If samples are collected for laboratory analysis, a California sampler equipped with brass or stainless steel liners is used.

Upon retrieval, the sampler is disassembled into its component parts. One or more of the liners are selected for chemical analysis. The selected liner(s) are sealed with Teflon sheets, plastic caps, and tape. The samples are then labeled, logged on the chain-of-custody and preserved in a cooled ice chest.

Each soil sample is classified in the field with the aid of the Unified Soil Classification System and a Munsell soil color chart. Soil descriptions are detailed on the boring log.

Soil samples may also be field-screened for volatile organic vapor with a photoionization detector (PID) calibrated to a 100 ppm isobutylene standard. Soil samples or auger cuttings are placed into polyethylene bags or glass mason jars and allowed to accumulate (PID) headspace vapors for a period of five to ten minutes (temperature dependent). The instrument probe is inserted into the bags or mason jars and the maximum reading is recorded.

Samples are held in the possession of ENGEO personnel until transfer to the analytical laboratory. The transfer is accomplished in one of three ways; on-site pick up by the



laboratory, pick up by the laboratory at ENGEO offices; or delivery to the laboratory by ENGEO. Each transfer of responsibility is documented on a chain-of-custody log that accompanies the sample(s).

## **LABORATORY PROCEDURES**

### Laboratory Contractor Selection

The laboratories selected to perform the analytical work are certified by the California State Department of Health Services as qualified to perform the selected analyses. The selected laboratories are reviewed by ENGEO to provide that an adequate quality control program is in place and certified by the State of California.

### Chain-of-Custody Control

The following procedures are used during sampling and analytical activities to provide chain-of-custody control during transfer of samples from collection through delivery to the laboratory.

- Contact with the laboratory prior to the sampling date to attain the appropriate containers for the desired analysis and to alert the laboratory to the date of sampling and sample pick up.
- Documentation of the field sampling activities is logged.
- Each sample is clearly and completely labeled for identification.
- Chain-of-custody record documenting the transfer and possession of samples is maintained.
- A laboratory analysis request sheet for documenting analyses to be performed is completed.

### Samples Containers

Sample containers vary with each type of analytical parameter. Selected container types and materials are non-reactive with the sample and the particular analytical parameter being tested. Sample containers are cleaned and sterilized by the certified laboratory according to the EPA protocol for the individual analyses.

### Sample Preservation and Shipment

Various preservatives are used by the certified laboratory to retard chemical changes in the samples. The samples are stored on ice after collection. Sample shipment from ENGEO to laboratories performing the selected analyses routinely occurs within 24 hours of sample

collection. Sample holding times designated by DHS and the EPA for the specific analyses are observed.

### Analytical Procedures

The analysis of groundwater and soil samples is conducted in accordance with accepted quantitative analytical procedures. The following publications are considered the primary references for ground-water sample analysis, and the contracts with the laboratories analyzing the samples stipulate that the methods set out in these publications be used. These procedures used are periodically updated by federal and state agencies.

Standard Methods for the Examination of Water and Wastewater, 16th Edition, American Public Health Association, et al., 1985.

Methods for Chemical Analysis of Water and Wastes, United States Environmental Protection Agency, 600/4-79-020, March 1979.

Test Methods for Evaluation of Solid Waste: Physical/Chemical Methods, United States Environmental Protection Agency, SW-846, 1982.

Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater, United States Environmental Protection Agency, 600/4-82-057, 1982.

Practical Guide for Ground-Water Sampling, United States Environmental Protection Agency, 600/2-85/104.

RCRA Ground-Water Monitoring Technical Enforcement Guidance Document, United States Environmental Protection Agency, September 1986.

Leaking Underground Tank Field Manual, State of California Leaking Underground Fuel Tank Task Force; October 1989.

Tri-Regional Board Staff Recommendations For Preliminary Evaluation and Investigation of Underground Tank Sites, State of California Regional Water Quality Control Board (Regions 1, 2, and 5), August 10, 1990.

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**APPENDIX F**

McCampbell Analytical Inc.

Laboratory Analytical Report



McC Campbell Analytical Inc.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560  
Telephone : 925-798-1620 Fax : 925-798-1622  
<http://www.mccampbell.com> E-mail: [main@mccampbell.com](mailto:main@mccampbell.com)

ENGEIO Incorporated 2401 Crow Canyon Rd, Ste. 200 San Ramon, CA 94583	Client Project ID: #5403.1.002.01; Truck & Van	Date Sampled: 12/16/02
	Client Contact: Keith Nowell	Date Received: 12/16/02
	Client P.O.:	Date Extracted: 12/16/02-12/18/02
		Date Analyzed: 12/19/02

### Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline\*

Extraction method: SW5030B

Analytical methods: SW8021B/8015Cm

Work Order: 0212283


Lab ID	Client ID	Matrix	TPH(g)	DF	% SS
002A	1-2	S	27,g,m	1	107
006A	2-2	S	ND	1	107

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W S	NA 1.0	NA mg/Kg
--	--------	-----------	-------------

\*water and vapor samples are reported in µg/L, soil and sludge samples in mg/kg, wipe samples in µg/wipe, and TCLP extracts in µg/L.

# cluttered chromatogram; sample peak coclutes with surrogate peak.

+The following descriptions of the TPH chromatogram are cursory in nature and McC Campbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant, biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (stoddard solvent / mineral spirit?); f) one to a few isolated non-target peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than -2 vol. % sediment; j) reporting limit raised due to high MTBE content; k) TPH pattern that does not appear to be derived from gasoline (aviation gas). m) no recognizable pattern.

 Edward Hamilton, Lab Director





McC Campbell Analytical Inc.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560  
 Telephone : 925-798-1620 Fax : 925-798-1622  
<http://www.mcccampbell.com> E-mail: [main@mcccampbell.com](mailto:main@mcccampbell.com)

ENGEO Incorporated  2401 Crow Canyon Rd, Ste. 200  San Ramon, CA 94583	Client Project ID: #5403.1.002.01; Truck & Van	Date Sampled: 12/16/02
	Client Contact: Keith Nowell	Date Received: 12/16/02
	Client P.O.:	Date Extracted: 12/16/02-12/18/02
		Date Analyzed: 12/18/02

**Petroleum Oil & Grease with Silica Gel Clean-Up\***


Analytical Method: SM5520E/F

Work Order: 0212283

Lab ID	Client ID	Matrix	POG
0212283-002A	1-2	S	ND
0212283-006A	2-2	S	ND

Method Accuracy and Reporting Units	W	NA
	S	50 mg/Kg

DHS Certification No. 1644

 Edward Hamilton, Lab Director





ENGEO Incorporated  2401 Crow Canyon Rd, Ste. 200  San Ramon, CA 94583	Client Project ID: #5403.1.002.01; Truck & Van	Date Sampled: 12/16/02
	Client Contact: Keith Nowell	Date Received: 12/16/02
	Client P.O.:	Date Extracted: 12/16/02-12/18/02
		Date Analyzed: 12/20/02

**Volatiles Organics by P&T and GC/MS (Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 0212283

Lab ID	0212283-002A
Client ID	1-2
Matrix	Soil

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Acetone	ND<110	1.0	50	Benzene	ND	1.0	5.0
Bromobenzene	ND	1.0	5.0	Bromochloromethane	ND	1.0	5.0
Bromodichloromethane	ND	1.0	5.0	Bromoform	ND	1.0	5.0
Bromomethane	ND	1.0	5.0	2-Butanone (MEK)	ND	1.0	10
n-Butyl benzene	61	1.0	5.0	sec-Butyl benzene	20	1.0	5.0
tert-Butyl benzene	ND	1.0	5.0	Carbon Disulfide	ND	1.0	5.0
Carbon Tetrachloride	ND	1.0	5.0	Chlorobenzene	ND	1.0	5.0
Chloroethane	ND	1.0	5.0	2-Chloroethyl Vinyl Ether	ND	1.0	5.0
Chloroform	ND	1.0	5.0	Chloromethane	ND	1.0	5.0
2-Chlorotoluene	ND	1.0	5.0	4-Chlorotoluene	ND	1.0	5.0
Dibromochloromethane	ND	1.0	5.0	1,2-Dibromo-3-chloropropane	ND	1.0	5.0
1,2-Dibromoethane (EDB)	ND	1.0	5.0	Dibromomethane	ND	1.0	5.0
1,2-Dichlorobenzene	ND	1.0	5.0	1,3-Dichlorobenzene	ND	1.0	5.0
1,4-Dichlorobenzene	ND	1.0	5.0	Dichlorodifluoromethane	ND	1.0	5.0
1,1-Dichloroethane	ND	1.0	5.0	1,2-Dichloroethane (1,2-DCA)	ND	1.0	5.0
1,1-Dichloroethene	ND	1.0	5.0	cis-1,2-Dichloroethene	ND	1.0	5.0
trans-1,2-Dichloroethene	ND	1.0	5.0	1,2-Dichloropropane	ND	1.0	5.0
1,3-Dichloropropane	ND	1.0	5.0	2,2-Dichloropropane	ND	1.0	5.0
1,1-Dichloropropene	ND	1.0	5.0	cis-1,3-Dichloropropene	ND	1.0	5.0
trans-1,3-Dichloropropene	ND	1.0	5.0	Ethylbenzene	25	1.0	5.0
Hexachlorobutadiene	ND	1.0	5.0	2-Hexanone	ND	1.0	5.0
Iodomethane (Methyl iodide)	ND	1.0	10	4-Isopropyl toluene	ND	1.0	5.0
Isopropylbenzene	13	1.0	5.0	4-Methyl-2-pentanone (MIBK)	ND	1.0	5.0
Methylene chloride	ND<35	1.0	5.0	Methyl-t-butyl ether (MTBE)	10	1.0	5.0
Naphthalene	150	1.0	5.0	n-Propyl benzene	55	1.0	5.0
Styrene	ND	1.0	5.0	1,1,1,2-Tetrachloroethane	ND	1.0	5.0
1,1,2,2-Tetrachloroethane	ND	1.0	5.0	Tetrachloroethene	ND	1.0	5.0
Toluene	12	1.0	5.0	1,2,3-Trichlorobenzene	ND	1.0	5.0
1,2,4-Trichlorobenzene	ND	1.0	5.0	1,1,1-Trichloroethane	ND	1.0	5.0
1,1,2-Trichloroethane	ND	1.0	5.0	Trichloroethene	ND	1.0	5.0
Trichlorofluoromethane	ND	1.0	5.0	1,2,3-Trichloropropane	ND	1.0	5.0
1,2,4-Trimethylbenzene	74	1.0	5.0	1,3,5-Trimethylbenzene	30	1.0	5.0
Vinyl Acetate	ND	1.0	50	Vinyl Chloride	ND	1.0	5.0
Xylenes	41	1.0	5.0				

**Surrogate Recoveries (%)**

%SS1:	106	%SS2:	106
%SS3:	106		

**Comments:**

\* water and vapor samples and all TCLP & SPLP extracts are reported in µg/L, soil/sludge/solid samples in µg/kg, wipe samples in µg/wipe, product/oil/non-aqueous liquid samples in mg/L.

ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis.

h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~2 vol. % sediment; j) sample diluted due to high organic content.



ENGEO Incorporated  2401 Crow Canyon Rd, Ste. 200  San Ramon, CA 94583	Client Project ID: #5403.1.002.01; Truck & Van	Date Sampled: 12/16/02
	Client Contact: Keith Nowell	Date Received: 12/16/02
	Client P.O.:	Date Extracted: 12/16/02-12/18/02
		Date Analyzed: 12/20/02

**Volatiles Organics by P&T and GC/MS (Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 0212283

Lab ID	0212283-006A
Client ID	2-2
Matrix	Soil

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Acetone	ND<110	1.0	50	Benzene	ND	1.0	5.0
Bromobenzene	ND	1.0	5.0	Bromochloromethane	ND	1.0	5.0
Bromodichloromethane	ND	1.0	5.0	Bromoform	ND	1.0	5.0
Bromomethane	ND	1.0	5.0	2-Butanone (MEK)	ND	1.0	10
n-Butyl benzene	ND	1.0	5.0	sec-Butyl benzene	ND	1.0	5.0
tert-Butyl benzene	ND	1.0	5.0	Carbon Disulfide	ND	1.0	5.0
Carbon Tetrachloride	ND	1.0	5.0	Chlorobenzene	ND	1.0	5.0
Chloroethane	ND	1.0	5.0	2-Chloroethyl Vinyl Ether	ND	1.0	5.0
Chloroform	ND	1.0	5.0	Chloromethane	ND	1.0	5.0
2-Chlorotoluene	ND	1.0	5.0	4-Chlorotoluene	ND	1.0	5.0
Dibromochloromethane	ND	1.0	5.0	1,2-Dibromo-3-chloropropane	ND	1.0	5.0
1,2-Dibromoethane (EDB)	ND	1.0	5.0	Dibromomethane	ND	1.0	5.0
1,2-Dichlorobenzene	ND	1.0	5.0	1,3-Dichlorobenzene	ND	1.0	5.0
1,4-Dichlorobenzene	ND	1.0	5.0	Dichlorodifluoromethane	ND	1.0	5.0
1,1-Dichloroethane	ND	1.0	5.0	1,2-Dichloroethane (1,2-DCA)	ND	1.0	5.0
1,1-Dichloroethene	ND	1.0	5.0	cis-1,2-Dichloroethene	ND	1.0	5.0
trans-1,2-Dichloroethene	ND	1.0	5.0	1,2-Dichloropropane	ND	1.0	5.0
1,3-Dichloropropane	ND	1.0	5.0	2,2-Dichloropropane	ND	1.0	5.0
1,1-Dichloropropene	ND	1.0	5.0	cis-1,3-Dichloropropene	ND	1.0	5.0
trans-1,3-Dichloropropene	ND	1.0	5.0	Ethylbenzene	ND	1.0	5.0
Hexachlorobutadiene	ND	1.0	5.0	2-Hexanone	ND	1.0	5.0
Iodomethane (Methyl iodide)	ND	1.0	10	4-Isopropyl toluene	ND	1.0	5.0
Isopropylbenzene	ND	1.0	5.0	4-Methyl-2-pentanone (MIBK)	ND	1.0	5.0
Methylene chloride	ND<35	1.0	5.0	Methyl-t-butyl ether (MTBE)	ND	1.0	5.0
Naphthalene	ND	1.0	5.0	n-Propyl benzene	ND	1.0	5.0
Styrene	ND	1.0	5.0	1,1,1,2-Tetrachloroethane	ND	1.0	5.0
1,1,2,2-Tetrachloroethane	ND	1.0	5.0	Tetrachloroethene	ND	1.0	5.0
Toluene	ND<10	1.0	5.0	1,2,3-Trichlorobenzene	ND	1.0	5.0
1,2,4-Trichlorobenzene	ND	1.0	5.0	1,1,1-Trichloroethane	ND	1.0	5.0
1,1,2-Trichloroethane	ND	1.0	5.0	Trichloroethene	ND	1.0	5.0
Trichlorofluoromethane	ND	1.0	5.0	1,2,3-Trichloropropane	ND	1.0	5.0
1,2,4-Trimethylbenzene	ND	1.0	5.0	1,3,5-Trimethylbenzene	ND	1.0	5.0
Vinyl Acetate	ND	1.0	50	Vinyl Chloride	ND	1.0	5.0
Xylenes	ND	1.0	5.0				

**Surrogate Recoveries (%)**

%SS1:	111	%SS2:	105
%SS3:	93.2		

**Comments:**

\* water and vapor samples and all TCLP & SPLP extracts are reported in µg/L, soil/sludge/solid samples in µg/kg, wipe samples in µg/wipe, product/oil/non-aqueous liquid samples in mg/L.

ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis.

h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~2 vol. % sediment; j) sample diluted due to high organic content.



McC Campbell Analytical Inc.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560  
Telephone : 925-798-1620 Fax : 925-798-1622  
http://www.mcccampbell.com E-mail: main@mcccampbell.com

ENGEO Incorporated 2401 Crow Canyon Rd, Ste. 200 San Ramon, CA 94583	Client Project ID: #5403.1.002.01; Truck & Van	Date Sampled: 12/16/02
	Client Contact: Keith Nowell	Date Received: 12/16/02
	Client P.O.:	Date Extracted: 12/16/02-12/18/02
		Date Analyzed: 12/17/02-12/20/02

**LUFT 5 Metals\***

Extraction method: SW3050B

Analytical methods: 6010C

Work Order: 0212283

Lab ID	Client ID	Matrix	Extraction	Cadmium	Chromium	Lead	Nickel	Zinc	DF	% SS
002A	1-2	S	TTLIC	ND	30	12	32	64	1	90.2
006A	2-2	S	TTLIC	ND	40	8.8	51	55	1	92.9

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	TTLIC	NA	NA	NA	NA	NA	NA	NA
	S	TTLIC	0.5	0.5	3.0	2.0	1.0	NA	mg/Kg

\* water samples are reported in mg/L, soil/sludge/solid/product samples in mg/kg, wipes in µg/wipe and all TCLP / STLC / DISTLC / SPIP extracts in mg/L.  
 ND means not detected above the reporting limit; N/A means not applicable to this sample or instrument.  
 Analytical Methods: EPA 6010C/200.7 for all elements except: 200.9 (water- Sb, As, Pb, Se, Tl); 245.1 (Hg); 7010 (sludge/soil/solid/oil/product/wipes - As, Se, Tl); 7471B (Hg).  
 DISTLC extractions are performed using STLC methodology except that deionized water is substituted for citric acid buffer as the extraction fluid.  
 DISTLC results are not applicable to STLC regulatory limits.  
 i) liquid sample that contains greater than ~2 vol. % sediment; this sediment is extracted with the liquid, in accordance with EPA methodologies and can significantly effect reported metal concentrations; 2) reporting limit raised due to matrix interference.

Edward Hamilton, Lab Director



### QC SUMMARY REPORT FOR SW8021B/8015Cm

Matrix: S

WorkOrder: 0212283

EPA Method: SW8021B/8015Cm		Extraction: SW5030B		BatchID: 5361		Spiked Sample ID: N/A				
Compound	Sample	Spiked	MS*	MSD*	MS-MSD*	LCS	LCSD	LCSS-LCSD	Acceptance Criteria (%)	
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
TPH(gas)	N/A	0.60	N/A	N/A	N/A	110	103	6.80	80	120
MTBE	N/A	0.10	N/A	N/A	N/A	104	101	3.55	80	120
Benzene	N/A	0.10	N/A	N/A	N/A	111	111	0.106	80	120
Toluene	N/A	0.10	N/A	N/A	N/A	103	103	0.142	80	120
Ethylbenzene	N/A	0.10	N/A	N/A	N/A	107	107	0.236	80	120
Xylenes	N/A	0.30	N/A	N/A	N/A	103	103	0	80	120
%SS:	N/A	100	N/A	N/A	N/A	110	111	0.458	80	120

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:  
 NONE

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

$\% \text{ Recovery} = 100 * (\text{MS} - \text{Sample}) / (\text{Amount Spiked})$ ;  $\text{RPD} = 100 * (\text{MS} - \text{MSD}) / (\text{MS} + \text{MSD}) * 2$

\* MS and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if. a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery.



**QC SUMMARY REPORT FOR SW8015C**

Matrix: S

WorkOrder: 0212283

EPA Method: SW8015C		Extraction: SW3550C			BatchID: 5343			Spiked Sample ID: N/A		
Compound	Sample	Spiked	MS*	MSD*	MS-MSD*	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
TPH(d)	N/A	150	N/A	N/A	N/A	89	90.8	2.08	70	130
%SS:	N/A	100	N/A	N/A	N/A	98.6	101	2.15	70	130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:  
 NONE

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

% Recovery =  $100 * (MS - Sample) / (Amount\ Spiked)$ ; RPD =  $100 * (MS - MSD) / (MS + MSD) * 2$ .

\* MS and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery.



**QC SUMMARY REPORT FOR SM5520E/F**

Matrix: S

WorkOrder: 0212283

EPA Method: SM5520E/F		Extraction: PR9071_SG_S		BatchID: 5127		Spiked Sample ID: 0212028-001A				
Compound	Sample	Spiked	MS*	MSD*	MS-MSD*	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
POG	ND	200	109	109	0	105	105	0	70	130
All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions: NONE										

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

% Recovery =  $100 * (MS - Sample) / (Amount\ Spiked)$ ; RPD =  $100 * (MS - MSD) / (MS + MSD) * 2$ .

\* MS and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery.



### QC SUMMARY REPORT FOR 6010C

Matrix: S

WorkOrder: 0212283

EPA Method: 6010C		Extraction: SW3050B			BatchID: 5397		Spiked Sample ID: N/A			
Compound	Sample	Spiked	MS*	MSD*	MS-MSD*	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
Cadmium	N/A	500	N/A	N/A	N/A	97.3	111	12.9	70	130
Chromium	N/A	500	N/A	N/A	N/A	90.9	97.1	6.57	70	130
Lead	N/A	500	N/A	N/A	N/A	88.7	102	13.6	70	130
Nickel	N/A	500	N/A	N/A	N/A	87.4	97	10.4	70	130
Zinc	N/A	500	N/A	N/A	N/A	89.5	95	6.02	70	130
%SS:	N/A	100	N/A	N/A	N/A	92.8	99.6	7.08	70	130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:  
 NONE

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

% Recovery = 100 \* (MS-Sample) / (Amount Spiked); RPD = 100 \* (MS - MSD) / (MS + MSD) \* 2.

\* MS and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery.

eng

# EN GEO INCORPORATED

2401 Crow Canyon Road Suite 200  
San Ramon, CA 94583  
Phone: (925) 838-1600  
Fax (925) 838-7425

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## CHAIN OF CUSTODY RECORD

PROJECT NUMBER: 5403.1.002.01		PROJECT NAME: AAA Truck & Van					TPH - GASOLINE (EPA 801.6030)	TPH - DIESEL/MIX (EPA 801.5050/510)	PURGEABLE AROMATICS (EPA 602.8020)	PURGEABLE HALOCARBONS (EPA 601.810)	VOLATILE ORGANICS (EPA 624.8100)	SEMI VOLATILE ORGANICS (EPA 517)	TOTAL OIL & GREASE (SWWV 5520 (EF))	PCBs (EPA 605.8082)	TITLE 26 METALS (17)	LUFT METALS	REMARKS/ REQUIRED DETECTION LIMITS
SAMPLED BY: (SIGNATURE) Keith Nowell (Keith Nowell)																	
SAMPLE NUMBER	DATE	TIME	MATRIX	CONTAINER NUMBER	CONTAINER SIZE	PRESER-VATIVE											
1-1	12-16-02	10:40	Soil	1	2"x6"	Ice											Hold
1-2	12-16-02	10:47	Soil	1	2"x6"	Ice	X	X		X		X					Hold Off Hold 12/17/02
1-3	12-16-02	10:52	Soil	1	2"x6"	Ice											Hold
1-4	12-16-02	10:58	Soil	1	2"x6"	Ice											Hold
2-1	12-16-02	12:29	Soil	1	2"x6"	Ice											Hold
2-2	12-16-02	12:30	Soil	1	2"x6"	Ice	X	X		X		X					
2-3	12-16-02	12:35	Soil	1	2"x6"	Ice											Hold
2-4	12-16-02	12:40	Soil	1	2"x6"	Ice											Hold
2-5	12-16-02	12:45	Soil	1	2"x6"	Ice											Hold
1-4	12-16-02	10:55	Soil	1	2"x6"	Ice											Hold
RELINQUISHED BY: <u>Keith Nowell</u> DATE/TIME: <u>12/16/02 17:35</u> RECEIVED BY: <u>Melvin Valler</u>							RELINQUISHED BY: _____      DATE/TIME: _____      RECEIVED BY: _____										
RELINQUISHED BY: _____      DATE/TIME: _____      RECEIVED BY: _____							RELINQUISHED BY: _____      DATE/TIME: _____      RECEIVED BY: _____										
RELINQUISHED BY: _____      DATE/TIME: _____      RECEIVED FOR LABORATORY BY: _____							REMARKS <u>Report TERHAS Diesel and Motor Oil Standard FAT</u>										



**McCampbell Analytical Inc.**



110 Second Avenue South, #D7  
 Pacheco, CA 94553-5560  
 (925) 798-1620

**CHAIN-OF-CUSTODY RECORD**

WorkOrder: 0212283

Client:

ENGEO Incorporated  
 2401 Crow Canyon Rd, Ste. 200  
 San Ramon, CA 94583

TEL: (925) 838-1600  
 FAX: (925) 838-7425  
 ProjectNo: #5403.1.002.01; Truck & Van  
 PO:

Date Received: 12/16/02  
 Date Printed: 12/18/02

Sample ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests				
					6010C	SM5520E/F	SW8015C	8021B/8015	SW8260B
0212283-001	1-1	Soil	12/16/02 10:40:00 AM	✓			A	A	
0212283-002	1-2	Soil	12/16/02 10:47:00 AM		A	A	A	A	A
0212283-003	1-3	Soil	12/16/02 10:52:00 AM	✓			A	A	
0212283-004	1-5	Soil	12/16/02 10:50:00 AM	✓			A	A	
0212283-005	2-1	Soil	12/16/02 12:25:00 PM	✓			A	A	
0212283-006	2-2	Soil	12/16/02 12:30:00 PM		A	A	A	A	A
0212283-007	2-3	Soil	12/16/02 12:35:00 PM	✓			A	A	
0212283-008	2-4	Soil	12/16/02 12:40:00 PM	✓			A	A	
0212283-009	2-5	Soil	12/16/02 12:45:00 PM	✓			A	A	
0212283-010	1-4	Soil	12/16/02 10:55:00 AM	✓			A	A	

Prepared by: Sonia Valles

Comments:

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense.





ENGEO Incorporated 2401 Crow Canyon Rd, Ste. 200 San Ramon, CA 94583	Client Project ID: #5403.1.002.01; AAA Truck & Van	Date Sampled: 12/30/02
	Client Contact: Keith Nowell	Date Received: 12/30/02
	Client P.O.:	Date Extracted: 12/30/02
		Date Analyzed: 12/30/02

Diesel (C10-23) and Oil (C18+) Range Extractable Hydrocarbons as Diesel and Motor Oil\*

Extraction method: SW3550C Analytical methods: SW8015C Work Order: 0212463

Lab ID	Client ID	Matrix	TPH(d)	TPH(mo)	DF	% SS
0212463-002A	3-2	S	ND	ND	1	106
Reporting Limit for DF=1; ND means not detected at or above the reporting limit	W	NA	NA	ug/L		
	S	1.0	5.0	mg/Kg		

\* water and vapor samples are reported in µg/L, wipe samples in ug/wipe, soil/solid/sludge samples in mg/kg, product/oil/non-aqueous liquid samples in mg/L, and all TCLP / STLC / SPLP extracts in µg/L

# cluttered chromatogram resulting in coeluted surrogate and sample peaks, or; surrogate peak is on elevated baseline, or; surrogate has been diminished by dilution of original extract.

+The following descriptions of the TPH chromatogram are cursory in nature and McC Campbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified diesel is significant; b) diesel range compounds are significant; no recognizable pattern; c) aged diesel? is significant); d) gasoline range compounds are significant; e) unknown medium boiling point pattern that does not appear to be derived from diesel; f) one to a few isolated peaks present; g) oil range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~2 vol. % sediment; k) kerosene/kerosene range; l) bunker oil; m) fuel oil; n) stoddard solvent / mineral spirit.



McC Campbell Analytical Inc.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560  
Telephone : 925-798-1620 Fax : 925-798-1622  
http://www.mcccampbell.com E-mail: main@mcccampbell.com

ENGEO Incorporated 2401 Crow Canyon Rd, Ste. 200 San Ramon, CA 94583	Client Project ID: #5403.1.002.01; AAA Truck & Van	Date Sampled: 12/30/02
	Client Contact: Keith Nowell	Date Received: 12/30/02
	Client P.O.:	Date Extracted: 12/30/02
		Date Analyzed: 12/30/02

**Petroleum Oil & Grease with Silica Gel Clean-Up\***

Analytical methods: SM5520E/F

Work Order: 0212463

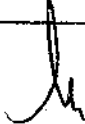
Lab ID	Client ID	Matrix	POG	DF	% SS
0212463-002A	3-2	S	ND	1	N/A

Reporting Limit for DF = 1; ND means not detected at or above the reporting limit	W	NA	NA
	S	50	mg/Kg

\* water and vapor samples and all TCLP & SPLP extracts are reported in mg/L, soil/sludge/solid samples in mg/kg, wipe samples in mg/wipe, product/oil/non-aqueous liquid samples in mg/L.

DF = dilution factor (may be raised to dilute target analyte or matrix interference)

h) a lighter than water immiscible shecn/product is present; i) liquid sample that contains greater than ~2 vol. % sediment.



Edward Hamilton, Lab Director



ENGEO Incorporated  2401 Crow Canyon Rd, Ste. 200  San Ramon, CA 94583	Client Project ID: #5403.1.002.01; AAA Truck & Van	Date Sampled: 12/30/02
	Client Contact: Keith Nowell	Date Received: 12/30/02
	Client P.O.:	Date Extracted: 12/30/02
		Date Analyzed: 01/03/03

**Volatiles Organics by P&T and GC/MS (Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 0212463

Lab ID	0212463-002A
Client ID	3-2
Matrix	Soil

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Acetone	ND	1.0	5.0	Benzene	ND	1.0	5.0
Bromobenzene	ND	1.0	5.0	Bromochloromethane	ND	1.0	5.0
Bromodichloromethane	ND	1.0	5.0	Bromoform	ND	1.0	5.0
Bromomethane	ND	1.0	5.0	2-Butanone (MEK)	ND	1.0	10
n-Butyl benzene	ND	1.0	5.0	sec-Butyl benzene	ND	1.0	5.0
tert-Butyl benzene	ND	1.0	5.0	Carbon Disulfide	ND	1.0	5.0
Carbon Tetrachloride	ND	1.0	5.0	Chlorobenzene	ND	1.0	5.0
Chloroethane	ND	1.0	5.0	2-Chloroethyl Vinyl Ether	ND	1.0	5.0
Chloroform	ND	1.0	5.0	Chloromethane	ND	1.0	5.0
2-Chlorotoluene	ND	1.0	5.0	4-Chlorotoluene	ND	1.0	5.0
Dibromochloromethane	ND	1.0	5.0	1,2-Dibromo-3-chloropropane	ND	1.0	5.0
1,2-Dibromoethane (EDB)	ND	1.0	5.0	Dibromomethane	ND	1.0	5.0
1,2-Dichlorobenzene	ND	1.0	5.0	1,3-Dichlorobenzene	ND	1.0	5.0
1,4-Dichlorobenzene	ND	1.0	5.0	Dichlorodifluoromethane	ND	1.0	5.0
1,1-Dichloroethane	ND	1.0	5.0	1,2-Dichloroethane (1,2-DCA)	ND	1.0	5.0
1,1-Dichloroethene	ND	1.0	5.0	cis-1,2-Dichloroethene	ND	1.0	5.0
trans-1,2-Dichloroethene	ND	1.0	5.0	1,2-Dichloropropane	ND	1.0	5.0
1,3-Dichloropropane	ND	1.0	5.0	2,2-Dichloropropane	ND	1.0	5.0
1,1-Dichloropropene	ND	1.0	5.0	cis-1,3-Dichloropropene	ND	1.0	5.0
trans-1,3-Dichloropropene	ND	1.0	5.0	Ethylbenzene	ND	1.0	5.0
Hexachlorobutadiene	ND	1.0	5.0	2-Hexanone	ND	1.0	5.0
Iodomethane (Methyl iodide)	ND	1.0	10	4-Isopropyl toluene	ND	1.0	5.0
Isopropylbenzene	ND	1.0	5.0	4-Methyl-2-pentanone (MIBK)	ND	1.0	5.0
Methylene chloride	ND	1.0	5.0	Methyl-t-butyl ether (MTBE)	ND	1.0	5.0
Naphthalene	ND	1.0	5.0	n-Propyl benzene	ND	1.0	5.0
Styrene	ND	1.0	5.0	1,1,1,2-Tetrachloroethane	ND	1.0	5.0
1,1,2,2-Tetrachloroethane	ND	1.0	5.0	Tetrachloroethene	ND	1.0	5.0
Toluene	ND	1.0	5.0	1,2,3-Trichlorobenzene	ND	1.0	5.0
1,2,4-Trichlorobenzene	ND	1.0	5.0	1,1,1-Trichloroethane	ND	1.0	5.0
1,1,2-Trichloroethane	ND	1.0	5.0	Trichloroethene	ND	1.0	5.0
Trichlorofluoromethane	ND	1.0	5.0	1,2,3-Trichloropropane	ND	1.0	5.0
1,2,4-Trimethylbenzene	ND	1.0	5.0	1,3,5-Trimethylbenzene	ND	1.0	5.0
Vinyl Acetate	ND	1.0	5.0	Vinyl Chloride	ND	1.0	5.0
Xylenes	ND<10	1.0	5.0				

**Surrogate Recoveries (%)**

%SS1:	79.0	%SS2:	104
%SS3:	107		

**Comments:**

\* water and vapor samples and all TCLP & SPLP extracts are reported in µg/L, soil/sludge/solid samples in µg/kg, wipe samples in µg/wipe, product/oil/non-aqueous liquid samples in mg/L.

ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis.

h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~2 vol. % sediment; j) sample diluted due to high organic content.



### QC SUMMARY REPORT FOR SW8021B/8015Cm

Matrix: S

WorkOrder: 0212463

EPA Method: SW8021B/8015Cm		Extraction: SW5030B		BatchID: 5499			Spiked Sample ID: 0212463-002A			
Compound	Sample	Spiked	MS*	MSD*	MS-MSD*	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
TPH(gas)	ND	0.60	104	102	1.87	108	110	2.02	80	120
MTBE	ND	0.10	97.3	98.3	1.03	95.8	95.4	0.380	80	120
Benzene	0.007891	0.10	96.8	92.3	4.32	104	105	0.922	80	120
Toluene	0.01997	0.10	91.5	87.3	3.80	110	112	1.52	80	120
Ethylbenzene	ND	0.10	105	101	3.97	106	109	2.78	80	120
Xylenes	0.0055	0.30	94.8	94.8	0	103	107	3.17	80	120
%SS:	119	100	117	116	0.496	115	111	2.90	80	120

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:  
 NONE

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

% Recovery = 100 \* (MS-Sample) / (Amount Spiked); RPD = 100 \* (MS - MSD) / (MS + MSD) \* 2.

\* MS and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery.



**QC SUMMARY REPORT FOR SW8015C**

Matrix: S

WorkOrder: 0212463

EPA Method: SW8015C		Extraction: SW3550C		BatchID: 5463			Spiked Sample ID: N/A			
Compound	Sample	Spiked	MS*	MSD*	MS-MSD*	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
TPH(d)	N/A	150	N/A	N/A	N/A	112	84.4	27.9	70	130
%SS:	N/A	100	N/A	N/A	N/A	109	75.6	36.5	70	130
All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions: NONE										

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content

% Recovery =  $100 * (MS - Sample) / (Amount Spiked)$ ; RPD =  $100 * (MS - MSD) / (MS + MSD) * 2$ .

\* MS and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery.



**QC SUMMARY REPORT FOR SM5520E/F**

Matrix: S

WorkOrder: 0212463

EPA Method: SM5520E/F		Extraction: PR9071_SG_S		BatchID: 5418		Spiked Sample ID: N/A				
Compound	Sample	Spiked	MS*	MSD*	MS-MSD*	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
POG	N/A	200	N/A	N/A	N/A	107	104	2.28	70	130
All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions: NONE										

MS = Matrix Spike, MSD = Matrix Spike Duplicate, LCS = Laboratory Control Sample, LCSD = Laboratory Control Sample Duplicate, RPD = Relative Percent Deviation.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

% Recovery =  $100 * (MS - Sample) / (Amount\ Spiked)$ ; RPD =  $100 * (MS - MSD) / (MS + MSD) * 2$

\* MS and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery.





### QC SUMMARY REPORT FOR SW8260B

Matrix: S

WorkOrder: 0212463

EPA Method: SW8260B		Extraction: SW5030B		BatchID: 5500			Spiked Sample ID: 0212463-002A			
Compound	Sample	Spiked	MS*	MSD*	MS-MSD*	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/Kg	µg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
Benzene	ND	50	111	102	8.22	97.5	101	3.13	70	130
Chlorobenzene	ND	50	112	105	6.67	130	101	25.3	70	130
1,1-Dichloroethene	ND	50	87.9	80.7	8.47	110	101	8.65	70	130
Methyl-t-butyl ether (MTBE)	ND	50	102	93	9.64	79.7	101	23.8	70	130
Toluene	ND	50	110	102	6.83	111	109	2.00	70	130
Trichloroethene	ND	50	77.4	74.9	3.20	93	73	24.0	70	130
%SS1:	ND	100	105	107	1.66	101	112	10.2	70	130
%SS2:	ND	100	102	101	1.07	86.3	102	16.2	70	130
%SS3:	ND	100	102	98	4.13	110	97.1	12.8	70	130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:  
 NONE

MMS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

$\% \text{ Recovery} = 100 * (\text{MS} - \text{Sample}) / (\text{Amount Spiked}); \text{RPD} = 100 * (\text{MS} - \text{MSD}) / (\text{MS} + \text{MSD}) * 2.$

\* MS and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery.

Over

021x7V 5

# ENGEO INCORPORATED

2401 Crow Canyon Road Suite 200  
 San Ramon, CA 94583  
 Phone: (925) 838-1600  
 Fax (925) 838-7425

## CHAIN OF CUSTODY RECORD

PROJECT NUMBER		PROJECT NAME						TPH - GASOLINE (EPA 8015500)	TPH - DIESEL (EPA 8015500S1D)	PURGEABLE AROMATICS BTX (EPA 602.802D)	PURGEABLE HALOCARBONS (EPA 601.801D)	VOLATILE ORGANICS (EPA 624.9260)	SEMI VOLATILE ORGANICS (EPA 827E)	TOTAL OIL & GREASE (SWWY 550 (E/F))	PCBs (EPA 605.9082)	TITLE 26 METALS (17)	LEFT METALS	REMARKS/ REQUIRED DETECTION LIMITS
5403.1.02.01		AAA Truck & Van																
SAMPLED BY: (SIGNATURE)																		
Keith Nowell ( <i>Keith Nowell</i> )																		
SAMPLE NUMBER	DATE	TIME	MATRIX	CONTAINER NUMBER	CONTAINER SIZE	PRESER- VATIVE												
3-1	12-30-02	10:23	Soil	1	1.5"x6"	Ice												Hold
3-2	12-30-02	10:30	Soil	1	1.5"x6"	Ice	X	X			X		X					
3-3	12-30-02	10:38	Soil	1	1.5"x6"	Ice												Hold
3-4	12-30-02	10:43	Soil	1	1.5"x6"	Ice												Hold
3-5	12-30-02	10:50	Soil	1	1.5"x6"	Ice												Hold
-	-	-	-	-	-	-												
<p>VOID   VOID   METALS   OTHER</p> <p>ANALYST'S SIGNATURE: <i>[Signature]</i></p> <p>DATE/TIME: 12/30/02 1530</p> <p>RECEIVED BY: <i>[Signature]</i></p> <p>DATE/TIME: 12/30/02</p> <p>RECEIVED BY: <i>[Signature]</i></p> <p>RECEIVED FOR LABORATORY BY:</p> <p>REMARKS: Report TEPM as Diesel and motor oil, Run silica gel clean up on O&amp;G. Standard TAT.</p>																		

Matt Walker

**McC Campbell Analytical Inc.**



110 Second Avenue South, #D7  
 Pacheco, CA 94553-5560  
 (925) 798-1620

**CHAIN-OF-CUSTODY RECORD**

WorkOrder: 0212463

Client:

ENGEO Incorporated  
 2401 Crow Canyon Rd, Ste. 200  
 San Ramon, CA 94583

TEL: (925) 838-1600  
 FAX: (925) 838-7425  
 ProjectNo: #5403.1.002.01; AAA Truck & Van  
 PO:

Date Received: 12/30/02

Date Printed: 12/30/02

Sample ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests			
					SM5520E/F	SW8015C	8021B/8015	SW8260B
0212463-001	3-1	Soil	12/30/02 10:23:00 AM	✓			A	
0212463-002	3-2	Soil	12/30/02 10:30:00 AM		A	A	A	A
0212463-003	3-3	Soil	12/30/02 10:38:00 AM	✓			A	
0212463-004	3-4	Soil	12/30/02 10:43:00 AM	✓			A	
0212463-005	3-5	Soil	12/30/02 10:50:00 AM	✓			A	

Prepared by: Sonia Valles

Comments:

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense.



ENGEO Incorporated  
2401 Crow Canyon Rd, Ste. 200  
San Ramon, CA 94583

Client Project ID: #5403.1.002.01; AAA  
Truck & Van  
Client Contact: Keith Nowell  
Client P.O.:

Date Sampled: 12/30/02  
Date Received: 12/30/02  
Date Extracted: 02/04/03  
Date Analyzed: 02/04/03

**LUFT 5 Metals\***

Extraction method: SW3050B

Analytical methods: 6010C

Work Order: 0212463

Lab ID	Client ID	Matrix	Extraction	Cadmium	Chromium	Lead	Nickel	Zinc	DF	% SS
002A	3-2	S	TTLIC	ND	23	4.8	34	36	1	96.0

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	TfLC	NA	NA	NA	NA	NA	NA	NA	NA
	S	TfLC	0.5	0.5	3.0	2.0	1.0			mg/Kg

\* water samples are reported in mg/L, soil/sludge/solid/product samples in mg/kg, wipes in µg/wipe and all TCLP / STLC / DISTLC / SPLP extracts in mg/L.  
 ND means not detected above the reporting limit; N/A means not applicable to this sample or instrument.  
 Analytical Methods: EPA 6010C/200.7 for all elements except: 200.9 (water- Sb, As, Pb, Se, Tl); 245.1 (Hg); 7010 (sludge/soil/solid/oil/product/wipes - As, Se, Tl); 7471B (Hg).  
 DISTLC extractions are performed using STLC methodology except that deionized water is substituted for citric acid buffer as the extraction fluid.  
 DISTLC results are not applicable to STLC regulatory limits.  
 i) liquid sample that contains greater than ~2 vol. % sediment; this sediment is extracted with the liquid, in accordance with EPA methodologies and can significantly effect reported metal concentrations; z) reporting limit raised due to matrix interference.



### QC SUMMARY REPORT FOR 6010C

Matrix: S

WorkOrder: 0212463

EPA Method: 6010C		Extraction: SW3050B			BatchID: 5792		Spiked Sample ID: 0301419-008A			
Compound	Sample	Spiked	MS*	MSD*	MS-MSD*	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
Cadmium	ND	500	94.6	110	15.0	95.6	100	4.75	70	130
Chromium	15.36	500	92.5	92.2	0.321	99.7	98.5	1.19	70	130
Lead	22.43	500	92.9	106	12.4	97.5	103	5.85	70	130
Nickel	23.98	500	89.7	90.8	1.14	99.3	99.7	0.361	70	130
Zinc	50.69	500	93.9	90.8	3.02	99.3	99.9	0.660	70	130
%SS:	102	100	95	98.7	3.81	100	102	1.95	70	130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:  
 NONE

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content

% Recovery = 100 \* (MS-Sample) / (Amount Spiked); RPD = 100 \* (MS - MSD) / (MS + MSD) \* 2.

\* MS and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery.

**McC Campbell Analytical Inc.**



110 Second Avenue South, #D7  
 Pacheco, CA 94553-5560  
 (925) 798-1620

**CHAIN-OF-CUSTODY RECORD**

WorkOrder: 0212463

Client:

ENGEO Incorporated  
 2401 Crow Canyon Rd, Ste. 200  
 San Ramon, CA 94583

TEL: (925) 838-1600  
 FAX: (925) 838-7425  
 ProjectNo: #5403.1.002.01; AAA Truck & Van  
 PO:

Date Received: 12/30/02  
 Date Printed: 2/4/03

Sample ID	ClientSampleID	Matrix	Collection Date	Hold	Requested Tests				
					6010C	SM5520E/F	SW8015C	8021B/8015	SW8260B
0212463-001	3-1	Soil	12/30/02 10:23:00 AM	✓				A	
0212463-002	3-2	Soil	12/30/02 10:30:00 AM		A	A	A	A	A
0212463-003	3-3	Soil	12/30/02 10:38:00 AM	✓				A	
0212463-004	3-4	Soil	12/30/02 10:43:00 AM	✓				A	
0212463-005	3-5	Soil	12/30/02 10:50:00 AM	✓				A	

Prepared by: Melissa Valles

Comments: bill client per keith nowell 1/21; luft added 02-03-03 for sample 002 per keith nowell

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense.

Original

0210745

# ENGEO INCORPORATED

2401 Crow Canyon Road Suite 200  
San Ramon, CA 94583  
Phone: (925) 838-1600  
Fax (925) 838-7425

## CHAIN OF CUSTODY RECORD

PROJECT NUMBER 5403.1.002.01		PROJECT NAME AAA Truck & Van					ANALYSIS METHODS										REMARKS/ REQUIRED DETECTION LIMITS
SAMPLED BY: (SIGNATURE) Keith Nowell (Keith Nowell)							TPH - GASOLINE (EPA 801.6030)	TPH - DIESEL (EPA 801.6030/80310)	PURGEABLE AROMATICS RTEX (EPA 601.8020)	PURGEABLE HALOCARBONS (EPA 601.8010)	VOLATILE ORGANICS (EPA 624.5210)	SEMI VOLATILE ORGANICS (EPA 8270)	TOTAL OIL & GREASE (SWW 550 (E/F))	PCBS (EPA 605.5091)	LIFT METALS TAT		
SAMPLE NUMBER	DATE	TIME	MATRIX	CONTAINER NUMBER	CONTAINER SIZE	PRESERVATIVE											
3-1	12-30-02	10:23	Soil	1	1.5"x6"	Ice	X	X		X	X	X					Hold
3-2	12-30-02	10:30	Soil	1	1.5"x6"	Ice											Hold
3-3	12-30-02	10:38	Soil	1	1.5"x6"	Ice											Hold
3-4	12-30-02	10:43	Soil	1	1.5"x6"	Ice											Hold
3-5	12-30-02	10:50	Soil	1	1.5"x6"	Ice											

RECEIVED BY: [Signature] DATE/TIME: 12/30/02 1530

RECEIVED BY: [Signature] DATE/TIME: 12/30/02

RECEIVED FOR LABORATORY BY: [Signature]

REMARKS: REPORT PERM as Diesel and motor oil, Run silica gel clean up on O&G. Standard TAT.

Keith Nowell



ENGEO Incorporated  2401 Crow Canyon Rd, Ste. 200  San Ramon, CA 94583	Client Project ID: #5403.3.002.01; AAA Truck & Van	Date Sampled: 01/23/03
	Client Contact: Keith Nowell	Date Received: 01/23/03
	Client P.O.:	Date Extracted: 01/24/03
		Date Analyzed: 01/24/03

**Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline\***

Extraction method: SW5030B Analytical methods: 8015Cm Work Order: 0301297

Lab ID	Client ID	Matrix	TPH(g)	DF	% SS
001A	MW-1	W	ND	1	97.8
002A	MW-2	W	ND	1	95.9
003A	MW-3	W	ND	1	96.7

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	50	µg/L
	S	NA	NA

\*water and vapor samples are reported in µg/L, soil and sludge samples in mg/kg, wipe samples in µg/wipe, and TCLP extracts in µg/L.  
 # cluttered chromatogram; sample peak coelutes with surrogate peak.  
 +The following descriptions of the TPH chromatogram are cursory in nature and McC Campbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant, biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (stoddard solvent / mineral spirit?); f) one to a few isolated non-target peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~2 vol. % sediment; j) reporting limit raised due to high MTBE content; k) TPH pattern that does not appear to be derived from gasoline (aviation gas). m) no recognizable pattern.





McC Campbell Analytical Inc.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560  
Telephone : 925-798-1620 Fax : 925-798-1622  
http://www.mccampbell.com E-mail: main@mccampbell.com

ENGEIO Incorporated  2401 Crow Canyon Rd, Ste. 200  San Ramon, CA 94583	Client Project ID: #5403.3.002.01; AAA Truck & Van	Date Sampled: 01/23/03
	Client Contact: Keith Nowell	Date Received: 01/23/03
	Client P.O.:	Date Extracted: 01/23/03
		Date Analyzed: 01/24/03

**Diesel (C10-23) and Oil (C18+) Range Extractable Hydrocarbons as Diesel and Motor Oil\***

Extraction method: SW3510C

Analytical methods: SW8015C

Work Order: 0301297

Lab ID	Client ID	Matrix	TPH(d)	TPH(mo)	DF	% SS
0301297-001B	MW-1	W	76,c	ND	1	99.6
0301297-002B	MW-2	W	ND	ND	1	100
0301297-003B	MW-3	W	53,c	ND	1	103

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	50	250	µg/L
	S	NA	NA	mg/Kg

\* water and vapor samples are reported in µg/L, wipe samples in ug/wipe, soil/solid/sludge samples in mg/kg, product/oil/non-aqueous liquid samples in mg/L, and all TCLP / STLC / SPLP extracts in µg/L

# cluttered chromatogram resulting in coeluted surrogate and sample peaks, or; surrogate peak is on elevated baseline, or; surrogate has been diminished by dilution of original extract.

+The following descriptions of the TPH chromatogram are cursory in nature and McC Campbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified diesel is significant; b) diesel range compounds are significant; no recognizable pattern; c) aged diesel? is significant; d) gasoline range compounds are significant; e) unknown medium boiling point pattern that does not appear to be derived from diesel; f) one to a few isolated peaks present; g) oil range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~2 vol. % sediment; k) kerosene/kerosene range; l) bunker oil; m) fuel oil; n) stoddard solvent / mineral spirit.



McC Campbell Analytical Inc.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560  
Telephone : 925-798-1620 Fax : 925-798-1622  
http://www.mcccampbell.com E-mail: main@mcccampbell.com

ENGEO Incorporated  2401 Crow Canyon Rd, Ste. 200  San Ramon, CA 94583	Client Project ID: #5403.3.002.01; AAA Truck & Van	Date Sampled: 01/23/03
	Client Contact: Keith Nowell	Date Received: 01/23/03
	Client P.O.:	Date Extracted: 01/23/03
		Date Analyzed: 01/24/03

**Hexane Extractable Material with Silica Gel Clean Up\***

Extraction method: SM5520BF\_W

Analytical methods: E1664A

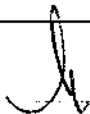
Work Order: 0301297

Lab ID	Client ID	Matrix	HEMSGT	DF	% SS
0301297-001D	MW-1	W	ND	1	N/A
0301297-002D	MW-2	W	ND	1	N/A
0301297-003D	MW-3	W	ND	1	N/A

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	5.0	mg/L
	S	NA	NA

\* water samples are reported in mg/L , wipe samples in mg/wipe and soils and sludges in mg/kg.  
 DF = dilution factor (may be raised to dilute target analyte or matrix interference).  
 # surrogate diluted out of range or not applicable to this sample.  
 g) sample extract repeatedly cleaned up with silica gel until constant IR result achieved; h) a lighter than water immiscible sheen/product is present; i)  
 liquid sample that contains greater than ~2 vol. % sediment.

DHS Certification No. 1644

 Angela Rydelius, Lab Manager



ENGEO Incorporated  2401 Crow Canyon Rd, Ste. 200  San Ramon, CA 94583	Client Project ID: #5403.3.002.01; AAA Truck & Van	Date Sampled: 01/23/03
	Client Contact: Keith Nowell	Date Received: 01/23/03
	Client P.O.:	Date Extracted: 01/25/03-01/28/03
		Date Analyzed: 01/25/03-01/28/03

**Volatiles Organics by P&T and GC/MS (Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 0301297

Lab ID	0301297-001C
Client ID	MW-1
Matrix	Water

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Acetone	ND<1.7	3.3	5.0	Benzene	ND<1.7	3.3	0.5
Bromobenzene	ND<1.7	3.3	0.5	Bromochloromethane	ND<1.7	3.3	0.5
Bromodichloromethane	ND<1.7	3.3	0.5	Bromoform	ND<1.7	3.3	0.5
Bromomethane	ND<1.7	3.3	0.5	2-Butanone (MEK)	ND<3.3	3.3	1.0
n-Butyl benzene	ND<1.7	3.3	0.5	sec-Butyl benzene	ND<1.7	3.3	0.5
tert-Butyl benzene	ND<1.7	3.3	0.5	Carbon Disulfide	ND<1.7	3.3	0.5
Carbon Tetrachloride	ND<1.7	3.3	0.5	Chlorobenzene	ND<1.7	3.3	0.5
Chloroethane	ND<1.7	3.3	0.5	2-Chloroethyl Vinyl Ether	ND<1.7	3.3	0.5
Chloroform	ND<1.7	3.3	0.5	Chloromethane	ND<1.7	3.3	0.5
2-Chlorotoluene	ND<1.7	3.3	0.5	4-Chlorotoluene	ND<1.7	3.3	0.5
Dibromochloromethane	ND<1.7	3.3	0.5	1,2-Dibromo-3-chloropropane	ND<1.7	3.3	0.5
1,2-Dibromoethane (EDB)	ND<1.7	3.3	0.5	Dibromomethane	ND<1.7	3.3	0.5
1,2-Dichlorobenzene	ND<1.7	3.3	0.5	1,3-Dichlorobenzene	ND<1.7	3.3	0.5
1,4-Dichlorobenzene	ND<1.7	3.3	0.5	Dichlorodifluoromethane	ND<1.7	3.3	0.5
1,1-Dichloroethane	ND<1.7	3.3	0.5	1,2-Dichloroethane (1,2-DCA)	ND<1.7	3.3	0.5
1,1-Dichloroethene	ND<1.7	3.3	0.5	cis-1,2-Dichloroethene	ND<1.7	3.3	0.5
trans-1,2-Dichloroethene	ND<1.7	3.3	0.5	1,2-Dichloropropane	ND<1.7	3.3	0.5
1,3-Dichloropropane	ND<1.7	3.3	0.5	2,2-Dichloropropane	ND<1.7	3.3	0.5
1,1-Dichloropropene	ND<1.7	3.3	0.5	cis-1,3-Dichloropropene	ND<1.7	3.3	0.5
trans-1,3-Dichloropropene	ND<1.7	3.3	0.5	Ethylbenzene	ND<1.7	3.3	0.5
Hexachlorobutadiene	ND<1.7	3.3	0.5	2-Hexanone	ND<1.7	3.3	0.5
Iodomethane (Methyl iodide)	ND<3.3	3.3	1.0	4-Isopropyl toluene	ND<1.7	3.3	0.5
Isopropylbenzene	ND<1.7	3.3	0.5	4-Methyl-2-pentanone (MIBK)	ND<1.7	3.3	0.5
Methylene chloride	ND<1.7	3.3	0.5	Methyl-t-butyl ether (MTBE)	71	3.3	0.5
Naphthalene	ND<1.7	3.3	0.5	n-Propyl benzene	ND<1.7	3.3	0.5
Styrene	ND<1.7	3.3	0.5	1,1,1,2-Tetrachloroethane	ND<1.7	3.3	0.5
1,1,2,2-Tetrachloroethane	ND<1.7	3.3	0.5	Tetrachloroethene	ND<1.7	3.3	0.5
Toluene	ND<1.7	3.3	0.5	1,2,3-Trichlorobenzene	ND<1.7	3.3	0.5
1,2,4-Trichlorobenzene	ND<1.7	3.3	0.5	1,1,1-Trichloroethane	ND<1.7	3.3	0.5
1,1,2-Trichloroethane	ND<1.7	3.3	0.5	Trichloroethene	ND<1.7	3.3	0.5
Trichlorofluoromethane	ND<1.7	3.3	0.5	1,2,3-Trichloropropane	ND<1.7	3.3	0.5
1,2,4-Trimethylbenzene	ND<1.7	3.3	0.5	1,3,5-Trimethylbenzene	ND<1.7	3.3	0.5
Vinyl Acetate	ND<1.7	3.3	5.0	Vinyl Chloride	ND<1.7	3.3	0.5
Xylenes	ND<1.7	3.3	0.5				

**Surrogate Recoveries (%)**

%SS1:	111	%SS2:	87.1
%SS3:	98.5		

Comments:  
 \* water and vapor samples and all TCLP & SPLP extracts are reported in µg/L, soil/sludge/solid samples in µg/kg, wipe samples in µg/wipe, product/oil/non-aqueous liquid samples in mg/L.  
 ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis.  
 h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~2 vol. % sediment; j) sample diluted due to high organic content.



ENGEO Incorporated  2401 Crow Canyon Rd, Ste. 200  San Ramon, CA 94583	Client Project ID: #5403.3.002.01; AAA Truck & Van	Date Sampled: 01/23/03
	Client Contact: Keith Nowell	Date Received: 01/23/03
	Client P.O.:	Date Extracted: 01/25/03-01/28/03
		Date Analyzed: 01/25/03-01/28/03

**Volatiles Organics by P&T and GC/MS (Basic Target List)\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 0301297

Lab ID	0301297-002C
Client ID	MW-2
Matrix	Water

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Acetone	ND	1.0	5.0	Benzene	ND	1.0	0.5
Bromobenzene	ND	1.0	0.5	Bromochloromethane	ND	1.0	0.5
Bromodichloromethane	ND	1.0	0.5	Bromoform	ND	1.0	0.5
Bromomethane	ND	1.0	0.5	2-Butanone (MEK)	ND	1.0	1.0
n-Butyl benzene	ND	1.0	0.5	sec-Butyl benzene	ND	1.0	0.5
tert-Butyl benzene	ND	1.0	0.5	Carbon Disulfide	ND	1.0	0.5
Carbon Tetrachloride	ND	1.0	0.5	Chlorobenzene	ND	1.0	0.5
Chloroethane	ND	1.0	0.5	2-Chloroethyl Vinyl Ether	ND	1.0	0.5
Chloroform	ND	1.0	0.5	Chloromethane	ND	1.0	0.5
2-Chlorotoluene	ND	1.0	0.5	4-Chlorotoluene	ND	1.0	0.5
Dibromochloromethane	ND	1.0	0.5	1,2-Dibromo-3-chloropropane	ND	1.0	0.5
1,2-Dibromoethane (EDB)	ND	1.0	0.5	Dibromomethane	ND	1.0	0.5
1,2-Dichlorobenzene	ND	1.0	0.5	1,3-Dichlorobenzene	ND	1.0	0.5
1,4-Dichlorobenzene	ND	1.0	0.5	Dichlorodifluoromethane	ND	1.0	0.5
1,1-Dichloroethane	ND	1.0	0.5	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.5
1,1-Dichloroethene	ND	1.0	0.5	cis-1,2-Dichloroethene	ND	1.0	0.5
trans-1,2-Dichloroethene	ND	1.0	0.5	1,2-Dichloropropane	ND	1.0	0.5
1,3-Dichloropropane	ND	1.0	0.5	2,2-Dichloropropane	ND	1.0	0.5
1,1-Dichloropropene	ND	1.0	0.5	cis-1,3-Dichloropropene	ND	1.0	0.5
trans-1,3-Dichloropropene	ND	1.0	0.5	Ethylbenzene	ND	1.0	0.5
Hexachlorobutadiene	ND	1.0	0.5	2-Hexanone	ND	1.0	0.5
Iodomethane (Methyl iodide)	ND	1.0	1.0	4-Isopropyl toluene	ND	1.0	0.5
Isopropylbenzene	ND	1.0	0.5	4-Methyl-2-pentanone (MIBK)	ND	1.0	0.5
Methylene chloride	ND	1.0	0.5	Methyl-t-butyl ether (MTBE)	1.3	1.0	0.5
Naphthalene	ND	1.0	0.5	n-Propyl benzene	ND	1.0	0.5
Styrene	ND	1.0	0.5	1,1,1,2-Tetrachloroethane	ND	1.0	0.5
1,1,2,2-Tetrachloroethane	ND	1.0	0.5	Tetrachloroethene	ND	1.0	0.5
Toluene	ND	1.0	0.5	1,2,3-Trichlorobenzene	ND	1.0	0.5
1,2,4-Trichlorobenzene	ND	1.0	0.5	1,1,1-Trichloroethane	ND	1.0	0.5
1,1,2-Trichloroethane	ND	1.0	0.5	Trichloroethene	ND	1.0	0.5
Trichlorofluoromethane	ND	1.0	0.5	1,2,3-Trichloropropane	ND	1.0	0.5
1,2,4-Trimethylbenzene	ND	1.0	0.5	1,3,5-Trimethylbenzene	ND	1.0	0.5
Vinyl Acetate	ND	1.0	5.0	Vinyl Chloride	ND	1.0	0.5
Xylenes	ND	1.0	0.5				

**Surrogate Recoveries (%)**

%SS1:	114	%SS2:	90.6
%SS3:	98.2		

**Comments:**

\* water and vapor samples and all TCLP & SPLP extracts are reported in µg/L, soil/sludge/solid samples in µg/kg, wipe samples in µg/wipe, product/oil/non-aqueous liquid samples in mg/L.

ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis.

h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~2 vol. % sediment; j) sample diluted due to high organic content.



ENGEIO Incorporated 2401 Crow Canyon Rd, Ste. 200 San Ramon, CA 94583	Client Project ID: #5403.3.002.01; AAA Truck & Van	Date Sampled: 01/23/03
	Client Contact: Keith Nowell	Date Received: 01/23/03
	Client P.O.:	Date Extracted: 01/25/03-01/28/03
		Date Analyzed: 01/25/03-01/28/03

## Volatiles Organics by P&amp;T and GC/MS (Basic Target List)\*

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 0301297

Lab ID		0301297-003C					
Client ID		MW-3					
Matrix		Water					
Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Acetone	ND	1.0	5.0	Benzene	ND	1.0	0.5
Bromobenzene	ND	1.0	0.5	Bromochloromethane	ND	1.0	0.5
Bromodichloromethane	ND	1.0	0.5	Bromoform	ND	1.0	0.5
Bromomethane	ND	1.0	0.5	2-Butanone (MEK)	ND	1.0	1.0
n-Butyl benzene	ND	1.0	0.5	sec-Butyl benzene	ND	1.0	0.5
tert-Butyl benzene	ND	1.0	0.5	Carbon Disulfide	ND	1.0	0.5
Carbon Tetrachloride	ND	1.0	0.5	Chlorobenzene	ND	1.0	0.5
Chloroethane	ND	1.0	0.5	2-Chloroethyl Vinyl Ether	ND	1.0	0.5
Chloroform	ND	1.0	0.5	Chloromethane	ND	1.0	0.5
2-Chlorotoluene	ND	1.0	0.5	4-Chlorotoluene	ND	1.0	0.5
Dibromochloromethane	ND	1.0	0.5	1,2-Dibromo-3-chloropropane	ND	1.0	0.5
1,2-Dibromoethane (EDB)	ND	1.0	0.5	Dibromomethane	ND	1.0	0.5
1,2-Dichlorobenzene	ND	1.0	0.5	1,3-Dichlorobenzene	ND	1.0	0.5
1,4-Dichlorobenzene	ND	1.0	0.5	Dichlorodifluoromethane	ND	1.0	0.5
1,1-Dichloroethane	ND	1.0	0.5	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.5
1,1-Dichloroethene	ND	1.0	0.5	cis-1,2-Dichloroethene	ND	1.0	0.5
trans-1,2-Dichloroethene	ND	1.0	0.5	1,2-Dichloropropane	ND	1.0	0.5
1,3-Dichloropropane	ND	1.0	0.5	2,2-Dichloropropane	ND	1.0	0.5
1,1-Dichloropropene	ND	1.0	0.5	cis-1,3-Dichloropropene	ND	1.0	0.5
trans-1,3-Dichloropropene	ND	1.0	0.5	Ethylbenzene	ND	1.0	0.5
Hexachlorobutadiene	ND	1.0	0.5	2-Hexanone	ND	1.0	0.5
Iodomethane (Methyl iodide)	ND	1.0	1.0	4-Isopropyl toluene	ND	1.0	0.5
Isopropylbenzene	ND	1.0	0.5	4-Methyl-2-pentanone (MIBK)	ND	1.0	0.5
Methylene chloride	ND	1.0	0.5	Methyl-t-butyl ether (MTBE)	ND	1.0	0.5
Naphthalene	ND	1.0	0.5	n-Propyl benzene	ND	1.0	0.5
Styrene	ND	1.0	0.5	1,1,1,2-Tetrachloroethane	ND	1.0	0.5
1,1,2,2-Tetrachloroethane	ND	1.0	0.5	Tetrachloroethene	ND	1.0	0.5
Toluene	ND	1.0	0.5	1,2,3-Trichlorobenzene	ND	1.0	0.5
1,2,4-Trichlorobenzene	ND	1.0	0.5	1,1,1-Trichloroethane	ND	1.0	0.5
1,1,2-Trichloroethane	ND	1.0	0.5	Trichloroethene	ND	1.0	0.5
Trichlorofluoromethane	ND	1.0	0.5	1,2,3-Trichloropropane	ND	1.0	0.5
1,2,4-Trimethylbenzene	ND	1.0	0.5	1,3,5-Trimethylbenzene	ND	1.0	0.5
Vinyl Acetate	ND	1.0	5.0	Vinyl Chloride	ND	1.0	0.5
Xylenes	ND	1.0	0.5				

## Surrogate Recoveries (%)

%SS1:	117	%SS2:	87.2
%SS3:	98.6		

## Comments:

\* water and vapor samples and all TCLP & SPLP extracts are reported in µg/L, soil/sludge/solid samples in µg/kg, wipe samples in µg/wipe, product/oil/non-aqueous liquid samples in mg/L.

ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis.

h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~2 vol. % sediment; j) sample diluted due to high organic content.



McC Campbell Analytical Inc.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560  
Telephone : 925-798-1620 Fax : 925-798-1622  
http://www.mccampbell.com E-mail: main@mccampbell.com

ENGEO Incorporated  2401 Crow Canyon Rd, Ste. 200  San Ramon, CA 94583	Client Project ID: #5403.3.002.01; AAA Truck & Van	Date Sampled: 01/23/03
	Client Contact: Keith Nowell	Date Received: 01/23/03
	Client P.O.:	Date Extracted: 01/23/03
		Date Analyzed: 01/24/03

**LUFT 5 Metals\***

Extraction method: E200.7/E200.9

Analytical methods: E200.7/E200.9

Work Order: 0301297

Lab ID	Client ID	Matrix	Extraction	Cadmium	Chromium	Lead	Nickel	Zinc	DF	% SS
001E	MW-1	W	DISS.	ND	ND	ND	ND	ND	1	N/A
002E	MW-2	W	DISS.	ND	ND	ND	ND	ND	1	N/A
003E	MW-3	W	DISS.	ND	ND	ND	ND	ND	1	N/A

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	DISS.	0.005	0.02	0.005	0.05	0.05	mg/L
	S	TTLIC	NA	NA	NA	NA	NA	NA


\* water samples are reported in mg/L, soil/sludge/solid/product samples in mg/kg, wipes in µg/wipe and all TCLP / STLC / DISTLC / SPLP extracts in mg/L.

ND means not detected above the reporting limit; N/A means not applicable to this sample or instrument.

Analytical Methods: EPA 6010C/200.7 for all elements except: 200.9 (water- Sb, As, Pb, Se, Ti); 245.1 (Hg); 7010 (sludge/soil/solid/oil/product/wipes - As, Se, Ti); 7471B (Hg).

DISTLC extractions are performed using STLC methodology except that deionized water is substituted for citric acid buffer as the extraction fluid. DISTLC results are not applicable to STLC regulatory limits.

) liquid sample that contains greater than ~2 vol. % sediment; this sediment is extracted with the liquid, in accordance with EPA methodologies and can significantly effect reported metal concentrations; z) reporting limit raised due to matrix interference.

 Angela Rydelius, Lab Manager



**QC SUMMARY REPORT FOR SW8021B/8015Cm**

Matrix: W

WorkOrder: 0301297

EPA Method: SW8021B/8015Cm		Extraction: SW5030B		BatchID: 5698			Spiked Sample ID: N/A			
Compound	Sample	Spiked	MS*	MSD*	MS-MSD*	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
TPH(gas)	N/A	60	N/A	N/A	N/A	107	113	5.68	80	120
MTBE	N/A	10	N/A	N/A	N/A	86	101	16.1	80	120
Benzene	N/A	10	N/A	N/A	N/A	100	109	8.26	80	120
Toluene	N/A	10	N/A	N/A	N/A	93.6	102	8.95	80	120
Ethylbenzene	N/A	10	N/A	N/A	N/A	99.1	112	11.8	80	120
Xylenes	N/A	30	N/A	N/A	N/A	96.7	103	6.67	80	120
%SS:	N/A	100	N/A	N/A	N/A	101	109	7.39	80	120

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:  
 NONE

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

% Recovery = 100 \* (MS - Sample) / (Amount Spiked); RPD = 100 \* (MS - MSD) / (MS + MSD) \* 2.

\* MS and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery.



### QC SUMMARY REPORT FOR SW8015C

Matrix: W

WorkOrder: 0301297

EPA Method: SW8015C		Extraction: SW3510C			BatchID: 5699			Spiked Sample ID: N/A		
Compound	Sample	Spiked	MS*	MSD*	MS-MSD*	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
TPH(d)	N/A	7500	N/A	N/A	N/A	96.3	98.7	2.47	70	130
%SS:	N/A	100	N/A	N/A	N/A	91.3	93.3	2.13	70	130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:  
 NONE

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

% Recovery =  $100 * (MS - Sample) / (Amount\ Spiked)$ ; RPD =  $100 * (MS - MSD) / (MS + MSD) * 2$ .

\* MS and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery.





### QC SUMMARY REPORT FOR E1664A

Matrix: W

WorkOrder: 0301297

EPA Method: E1664A		Extraction: SM5520BF_W			BatchID: 5592		Spiked Sample ID: N/A			
Compound	Sample	Spiked	MS*	MSD*	MS-MSD*	LCS	LCSD	Acceptance Criteria (%)		
	mg/L	mg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
HEMSGT	N/A	200	N/A	N/A	N/A	93	95	2.13	70	130
All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions: NONE										

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

% Recovery =  $100 * (MS - Sample) / (Amount Spiked)$ ; RPD =  $100 * (MS - MSD) / (MS + MSD) * 2$ .

\* MS and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery.



**QC SUMMARY REPORT FOR SW8260B**

Matrix: W

WorkOrder: 0301297

EPA Method: SW8260B		Extraction: SW5030B			BatchID: 5701		Spiked Sample ID: 0301288-004C			
Compound	Sample	Spiked	MS*	MSD*	MS-MSD*	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
Benzene	ND	10	110	110	0.298	105	104	1.37	70	130
Chlorobenzene	ND	10	112	108	3.02	105	102	2.48	70	130
1,1-Dichloroethene	ND	10	83.7	81.1	3.13	101	101	0.266	70	130
Methyl-t-butyl ether (MTBE)	ND	10	95.3	102	6.58	81.4	76.9	5.78	70	130
Toluene	ND	10	102	99	2.59	97.1	93.4	3.94	70	130
Trichloroethene	ND	10	102	103	1.40	85.4	83.6	2.16	70	130
%SS1:	106	100	97.3	98.3	1.00	110	105	4.84	70	130
%SS2:	91.2	100	95.4	94.1	1.42	89.5	84.6	5.62	70	130
%SS3:	93.0	100	93	92.3	0.754	98.6	98.1	0.506	70	130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:  
 NONE

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

% Recovery = 100 \* (MS-Sample) / (Amount Spiked); RPD = 100 \* (MS - MSD) / (MS + MSD) \* 2.

\* MS and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery.



### QC SUMMARY REPORT FOR E200.7/E200.9

Matrix: W

WorkOrder: 0301297

EPA Method: E200.7/E200.9		Extraction: E200.7/E200.9		BatchID: 5633		Spiked Sample ID: N/A				
Compound	Sample	Spiked	MS*	MSD*	MS-MSD*	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	mg/L	mg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
Cadmium	N/A	10	N/A	N/A	N/A	111	113	1.50	70	130
Chromium	N/A	10	N/A	N/A	N/A	97.6	97.4	0.185	70	130
Nickel	N/A	10	N/A	N/A	N/A	104	96.8	7.31	70	130
Zinc	N/A	10	N/A	N/A	N/A	108	102	5.90	70	130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:  
 NONE

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

% Recovery =  $100 * (MS - Sample) / (Amount\ Spiked)$ ; RPD =  $100 * (MS - MSD) / (MS + MSD) * 2$ .

\* MS and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery.



**QC SUMMARY REPORT FOR E200.7/E200.9**

Matrix: W

WorkOrder: 0301297

EPA Method: E200.7/E200.9		Extraction: E200.7/E200.9			BatchID: 5632		Spiked Sample ID: N/A			
Compound	Sample	Spiked	MS*	MSD*	MS-MSD*	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	mg/L	mg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
Lead	N/A	0.010	N/A	N/A	N/A	117	109	7.59	70	130
All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions: NONE										

MS = Matrix Spike, MSD = Matrix Spike Duplicate, LCS = Laboratory Control Sample, LCSD = Laboratory Control Sample Duplicate, RPD = Relative Percent Deviation.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

% Recovery =  $100 * (MS - Sample) / (Amount\ Spiked)$ ;  $RPD = 100 * (MS - MSD) / (MS + MSD) * 2$ .

\* MS and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery.

orig

0301297

# EN GEO INCORPORATED

2401 Crow Canyon Road Suite 200  
San Ramon, CA 94583  
Phone: (925) 838-1600  
Fax (925) 838-7425

## CHAIN OF CUSTODY RECORD

PROJECT NUMBER: 5403.3.002.01		PROJECT NAME: AAA Truck & Van															REMARKS/ REQUIRED DETECTION LIMITS
SAMPLED BY: (SIGNATURE) Keith Nowell (Keith Nowell)							TPH - GASOLINE (EPA 8015/5030)	TPH - DIESEL (EPA 8015/5035/510)	PURGEABLE AROMATICS BTX (EPA 601, 8020)	PURGEABLE HALOCARBONS (EPA 601, 8010)	VOLATILE ORGANICS (EPA 604, 8160)	SEMI VOLATILE ORGANICS (EPA 8270)	TOTAL OIL & GREASE (ASTM D 4000-97)	PCBs (EPA 605, 8082)	TITLE 26 METALS (17)	LOFT METALS	
SAMPLE NUMBER	DATE	TIME	MATRIX	CONTAINER NUMBER	CONTAINER SIZE	PRESERVATIVE											
MW-1	1-23-03	15:25	Aqueous	3	40ml	None	X				X						
MW-1	1-23-03	15:20	Aqueous	1	500ml	None									X		Filter metals prior to acidifying
MW-1	1-23-03	15:35	Aqueous	3	1000ml	None		X				X					
MW-2	1-23-03	13:45	Aqueous	3	40ml	None	X				X						
MW-2	1-23-03	13:50	Aqueous	1	500ml	None									X		4 4
MW-2	1-23-03	10:55	Aqueous	3	1000ml	None	X	X			X						
MW-3	1-23-03	11:50	Aqueous	3	40ml	None	X				X						
MW-3	1-23-03	11:55	Aqueous	1	500ml	None									X		11 4
MW-3	1-23-03	12:00	Aqueous	3	1000ml	None	X				X						8

<input checked="" type="checkbox"/> PRES. ✓ GOOD CONDITION HEAD SPACE ABSENT DECHLORINATED IN LAB	<input checked="" type="checkbox"/> PRESERVATION APPROPRIATE CONTAINERS PRESERVED IN LAB	<input checked="" type="checkbox"/> VOL ✓ <input checked="" type="checkbox"/> OIL ✓ <input checked="" type="checkbox"/> METALS ✓ <input checked="" type="checkbox"/> OTHER ✓
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RELINQUISHED BY: Keith Nowell	DATE / TIME: 1/23/03 1805	RECEIVED BY: [Signature]	RELINQUISHED BY:	DATE / TIME:	RECEIVED BY:
RELINQUISHED BY:	DATE / TIME:	RECEIVED BY:	RELINQUISHED BY:	DATE / TIME:	RECEIVED BY:
RELINQUISHED BY:	DATE / TIME:	RECEIVED FOR LABORATORY BY:	REMARKS: Report TEPA as Diesel and motor oil. Filter metals standard TAT		

**McC Campbell Analytical Inc.**

110 Second Avenue South, #107  
Pacheco, CA 94553-5560  
(925) 798-1620

**CHAIN-OF-CUSTODY RECORD**

WorkOrder: 0301297

**Client:**

ENGEO Incorporated  
2401 Crow Canyon Rd, Ste. 200  
San Ramon, CA 94583

TEL: (925) 838-1600  
FAX: (925) 838-7425  
ProjectNo: #5403.3.002.01; AAA Truck & Van  
PO:

Date Received: 1/23/03  
Date Printed: 1/23/03

Sample ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests				
					E1664A	200_7/E200_	SW8015C	8021B/8015	SW8260B
0301297-001	MW-1	Water	1/23/03		D	E	B	A	C
0301297-002	MW-2	Water	1/23/03		D	E	B	A	C
0301297-003	MW-3	Water	1/23/03		D	E	B	A	C

Prepared by: **Melissa Valles**

**Comments:**

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense.