R02584

TRANSMITTAL

Date: 5/11/2005

Project #: IA220

Project name: 649 Pacific Avenue

From: David A. Reinsma

To: Mr. Bob Shultz

Alameda County Health Care

Services Agency

1131 Harbor Bay Parkway,

Suite 250

Alameda, CA 94502-5577

Mr. Don Lindsey

Timber Del Properties, LLC

2424 Central Aveenue Alameda, CA 94501

Mr. Carl Searway 3032 Dakota Street Oakland, CA 94602 Mr. Mark Russel The Mechanics Bank

343 Sansome Street, Suite 100

San Francisco, CA 94101

# of Copies:	Description: Groundwater Investigation Report
	
For your:	 ☑ Use ☐ Approval ☑ Review ☐ Information
Notes: If you have an	y questions regarding the transmitted report, please call RRM.



May 11, 2005 Project IA220

Mr. Bob Shultz Hazardous Materials Specialist Alameda County Health Care Services Agency 1131 Harbor Bay Parkway, Suite 250 Alameda, CA 94502-5577

Re: Groundwater Investigation Report

649 Pacific Avenue Alameda, California

Dear Mr. Shultz:

This report, prepared by RRM, Inc. (RRM) on behalf of Timber Del Properties, LLC, presents the results of a groundwater investigation at the above referenced site (Figure 1). The purpose of the investigation was to characterize total petroleum hydrocarbons as Stoddard solvent (TPHss) impact to groundwater beneath the site. RRM performed the investigation following the *Groundwater Investigation Work Plan* by RRM, dated March 29, 2004. The work plan was requested in a letter dated January 26, 2004 prepared by the Alameda County Environmental Health Services (ACEHS) based on recommendations in RRM's *Project Status Letter* dated January 16, 2004 and a Corrective Action Plan (CAP) prepared by Stellar Environmental Solutions, Inc. (Stellar) dated July 31, 2003.

The general scope for this investigation included installing five groundwater monitoring wells, well development, sampling, and surveying, laboratory analyses of soil and groundwater samples, and preparation of this report. This report includes a discussion of the site background, previous investigations, scope of work, findings, and conclusions. Soil and groundwater analytical data are presented on Tables 1 and 2. Drilling permits are included in Attachment A. Field and laboratory procedures are presented as Attachment B. Boring logs, groundwater sampling field data sheets, and well elevation survey data are presented as Attachment C. Certified analytical reports and chain-of-custody documentation are presented as Attachment D.

SITE DESCRIPTION

The site is located at the intersection of Pacific Avenue and Webster Street in Alameda, Alameda County, California. The site was formerly the location of a dry cleaner operation beginning in the 1940's and operating until at least 1979. Existing site improvements include a building currently used as a restaurant, sail making business, and a storage space and an adjacent asphalt covered parking lot. Land use in the immediate site vicinity is commercial and residential. Adjacent parcels are occupied by a City of Alameda Fire Station, automotive service businesses, an assisted living home, a vacant parcel, a tailoring and cleaning business (with no on-site cleaning operations), and a martial arts studio. Several former and current gasoline service stations are also located within 1-2 blocks from the site.

SUMMARY OF PREVIOUS INVESTIGATION ACTIVITIES

On March 8, 2003, Stellar performed subsurface investigation activities at the site; investigation work was reported in Stellar's March 18, 2003 Subsurface Site Investigation Report. Four borings, designated BH-01 through BH-04 were advanced at the site. Soils encountered during drilling consisted of base rock fill to approximately 2.5 feet below ground surface (bgs), underlain by a fine-grained sand to a depth of approximately 5.5 feet bgs. The sand layer is underlain by clayey sand to depths ranging from 10 feet bgs to 15 feet bgs, the maximum depth explored. In boring BH-01, the clayey sand was underlain by a medium-grained sand from a depth of approximately 10 feet bgs to 12 feet bgs. Groundwater was encountered at depths ranging from 10 feet bgs to 13 feet bgs in each of the borings. Based on regional topography and information from monitoring activities performed at a site on the corner of Webster Street and Pacific Avenue from 1993 to 1995, groundwater flow at the site is generally west.

Soil samples were collected at depths ranging from 6.5 feet bgs to 12.5 feet bgs; groundwater samples were collected from each of the boreholes. All samples were analyzed in the laboratory for gasoline range and Stoddard solvent range total volatile hydrocarbons (TVHg and TVHss, respectively) and diesel range and motor oil range total extractable hydrocarbons (TEHd and TEHmo, respectively) by Environmental Protection Agency (EPA) Method 8015 modified; benzene, toluene, ethyl benzene, and xylenes (collectively BTEX) and methyl tertbutyl ether (MtBE) by EPA Method 8021B; and volatile organic compounds (VOCs) by EPA Method 8260B. In soil, TVHg were detected in two of the four samples at concentrations of 4.7 parts per million (ppm) and 8,800 ppm. TVHss were detected in two of the four samples at concentrations of 3.1 ppm and 5,800 ppm. The laboratory reported that the TVHg and TVHss results did not match the chromatogram standard for gasoline and Stoddard solvent. BTEX compounds, MtBE, TEHd, and TEHmo were not detected in any of the soil samples collected. No detectable concentrations of VOCs were found in any of the soil samples collected.

In groundwater, TVHg were detected in two of the four samples at concentrations of 360 parts per billion (ppb) and 270 ppb. TVHss were detected at concentrations of 270 ppb

and 280 ppb. BTEX compounds were detected in one of the four samples with benzene detected at a concentration of 0.68 ppb. MtBE was detected in three of the four samples at concentrations ranging from 2.1 ppb to 7.4 ppb. TEHd were detected in all four samples at concentrations ranging from 86 ppb to 8,400 ppb. TEHmo were detected in two of the four samples at concentrations of 470 ppb and 2,600 ppb. Groundwater samples contained chloroform in one of four samples at a concentration of 1.0 ppb; trichloroethene (TCE) in two of four samples at concentrations of 1.3 ppb and 1.9 ppb; tetrachloroethene (PCE) in two of four samples at concentrations ranging of 1.9 ppb and 2.6 ppb, trans 1,2-dichloroethene (trans 1,2-DCE) in one of four samples at a concentration of 0.5 ppb and cis 1,2-dichloroethene (cis 1,2-DCE) in one of four samples at a concentration of 0.7 ppb. Four additional borings (BH-05 through BH-08) were advanced at the 1713 Webster Street address, adjacent to the subject site. These borings are outside the area of investigation related to 649 Pacific Avenue, and thus are not discussed by this letter.

Based on the findings of the investigation, Stellar recommended review of additional environmental records to identify the sources of the impact discovered, the advancement of additional borings to define the lateral extent of Stoddard solvent impact, notification of relevant regulatory agencies regarding the findings, and an eventual site closure assessment after completion of additional assessment work.

On March 25, 2003, Stellar performed additional soil sampling along an exposed sanitary sewer trench at the site. This phase of the investigation was reported in Stellar's April 2, 2003 Report of Soil Analytical Results, Sanitary Sewer Line Trench at 649 Pacific Avenue, Alameda, California. Soil conditions along the trench were not logged during this phase of the investigation. A total of 9 soil samples were collected along the trench and 1 soil sample was collected from the base of the floor drain leading to the sanitary sewer line. Soil samples from along the sewer trench were collected from two depths at each of four locations. All samples were analyzed for TVHss, BTEX, and MtBE. TVHss was detected in three of the nine samples at concentrations ranging from 960 ppm to 2,700 ppm; all the samples with detected TVHss concentrations were from the lower soil strata at depths ranging from 7.5 feet to 8.0 feet bgs. Trace concentrations of ethyl benzene and xylenes were detected in the same three samples. MtBE was not detected in any of the samples collected.

Remedial investigation activities performed by Stellar between March and July 2003 were documented in Stellar's July 31, 2003 Site Remedial Investigation Report. Some of the data discussed in the July 31, 2003 report were previously reported in Stellar's March 18, 2003 and April 2, 2003 reports. The July 31, 2003 report summarized new findings and the findings of these previous investigation activities. A total of 16 additional soil borings were advanced on July 9 and July 10, 2003. Groundwater was encountered at depths ranging from ranging from 10 feet bgs to 13 feet bgs in each of the borings. A total of 14 soil samples

collected from the borings were selected for laboratory analyses; samples were analyzed for TVHss, BTEX compounds, and MtBE. Four of the samples were also analyzed for TEH. TVHss were detected in two of the soil samples at concentrations of 17 ppm and 1,900 ppm. TEH range hydrocarbons were detected in three soil samples at concentrations ranging from 9.4 ppm to 3,700 ppm. BTEX compounds and MtBE were not detected in any of the soil samples analyzed. A total of 9 groundwater samples were collected and analyzed for TVHss, BTEX compounds, and MtBE. Four of the groundwater samples were also analyzed for TEH. TVHss were detected in one of the samples at a concentration of 99,000 ppb. TEH were detected in all four samples at concentrations ranging from 100 to 250 ppb. Trace concentrations of toluene (2 samples) and total xylenes (one sample) were detected. MtBE was detected in 7 of the 9 groundwater samples at concentrations ranging from 3.3 ppb to 12 ppb. During July 2003 five additional borings (BH-13, BH-14, and BH-31 through BH-33) were advanced at the 1713 Webster Street address, adjacent to the subject site. These borings are outside the area of investigation related to 649 Pacific Avenue, and thus are not discussed by this report.

Based on the results of previous investigations, Stellar has attributed the soil and groundwater impact to former uses of the 649 Pacific Avenue building and potential discharges from the sanitary sewer line. After review of investigation data, RRM has also concluded that the sanitary sewer is the most likely source of Stoddard solvent impact at the site.

Based on the findings of investigation activities performed at the site, Stellar prepared a corrective action plan (CAP) dated July 31, 2003. The corrective action for the site proposed by Stellar included excavation of soil from beneath the floor of the 649 Pacific Avenue site. Stellar estimated that approximately 150 tons of impacted soil would be removed during the excavation activities to remove impacted soil to concentrations at or below 100 ppm. Stellar also proposed confirmation soil sampling following the removal of impacted soils. After completion of soil excavation and site restoration activities, Stellar proposed the installation of four groundwater monitoring wells and the performance of quarterly groundwater monitoring activities to confirm the effectiveness of the remedial excavation.

Pursuant to the recommendations made by Stellar and RRM, RRM recommended in the March 2004 work plan that a soil and groundwater investigation be performed. This investigation would include the installation and quarterly monitoring of five groundwater monitoring wells to further evaluate the lateral extent of Stoddard solvent impact, flow direction, gradient, and plume stability at the site.

SCOPE OF WORK

The following tasks detail the scope of work performed to complete this groundwater investigation.

Permits. Alameda County Public Works Agency permits for installing borings and groundwater monitoring wells were obtained prior to field work. Copies of the permits are included in Attachment A.

Soil Borings and Groundwater Monitoring Well Installations. Borings MW-1 though MW-5 were advanced to 20 feet below ground surface, and completed as 2-inch diameter groundwater monitoring wells. Wells MW-1 and MW-2 were completed inside the building at 649 Pacific Avenue, and wells MW-3, MW-4 and MW-5 were located in the parking lot immediately west of the building. These well locations were selected to delineate soil and groundwater conditions in the vicinity and downgradient of the previously identified Stoddard solvent detections.

Soil samples from each boring were collected for logging purposes, field analysis utilizing a photo-ionization detector (see boring logs), and chemical analyses. Boring logs are included in Attachment C.

Well Elevation Survey, Well Development, and Groundwater Sampling. Upon completion of the well installation, each well was surveyed by a licensed land surveyor to mean sea level and developed utilizing swab and bailing well development techniques. Depth to groundwater measurements and groundwater samples were then collected from each well. Survey data and well development and sampling field sheets are included in Attachment C.

Soil and Groundwater Analyses. Selected soil samples were analyzed in the laboratory for TPHss and BTEX. Groundwater samples from each well were analyzed in the laboratory for TPHss, TPHg, and BTEX. Tables 1 and 2 summarize the laboratory data for soil and groundwater samples.

FINDINGS

Subsurface Conditions

Soils beneath the site consisted predominantly of silty sand to the maximum depth explored of 20 feet bgs. Wells MW-2, MW-3, MW-4 and MW-5 also penetrated a clayer sand layer ranging in thickness from approximately 1 to 4 feet, within the depth interval from 4 to 11 feet bgs. Groundwater was encountered and stabilized at depths of approximately 5.0 to 5.6

feet bgs on March 1, 2005. Groundwater flow direction was calculated toward the northeast at a gradient of approximately 0.004 feet/feet (Figure 3).

Soils Analyses

The soil analytical data indicate non-detectable concentrations of TPHss in all borings except for MW-1, which had 380 ppm TPHss at a depth of 10 feet bgs, and 7 pm TPHss at 20 feet bgs. BTEX concentrations were below detection limits in all soil samples. Soil analytical data is presented on Figure 4 and Table 1.

Groundwater Analyses

The groundwater analytical data indicate non-detectable conentrations of TPHss and TPHg in all wells except MW-1, which had 550 ppb TPHss. BTEX concentrations were also non-detectable, except for toluene in MW-1 and MW-2. These wells had 0.73 and 0.53 ppb toluene detected, respectively. Groundwater analytical data is presented on Figure 3 and Table 2.

CONCLUSIONS AND RECOMMENDATIONS

The conclusions of the investigation are summarized below:

- Soils underlying the site consist predominantly of silty sand.
- Groundwater occurs at an approximate depth of 5 to 5.5 feet bgs.
- The only TPHss detection in soils was from MW-1, with a maximum concentration of 380 ppm at 10 feet bgs.
- The only TPHss detected in groundwater was 550 ppb in MW-1. Toluene at a maximum concentration of 0.73 ppb was detected in wells MW-1 and MW-2.

Based on the results of this investigation, RRM recommends quarterly monitoring of the five wells installed at the site. Monitoring over a period of at least one year will provide data for evaluation of plume stability.

If you have any questions regarding the contents of this letter report, please call RRM at (831) 475-8141.

ED Ga

DAVID A. REINSMA

Sincerely,

RRM, Inc.

Debra J. Moser

Project Geologist

Senior Geologist

RG 6906

Attachments: Table 1 – Soil Analytical Data

Table 2 – Groundwater Analytical Data Figure 1 – Site Location Map

Figure 2 – Groundwater Elevation and Analytical Results Map

Figure 3 – Soil Analytical Results Map Attachment A – Well Installation Permits

Attachment B – Field Procedures and Laboratory Methods

Attachment C - Boring Logs, Groundwater Sampling Field Data Sheets, and

Well Elevation Survey Data

Attachment D – Certified Analytical Reports and Chain of Custody

Documentation

Mr. Don Lindsey, Timber Del Properties, LLC, 2424 Central Ave., cc:

Alameda, California 94501

Mr. Carl Searway, 3032 Dakota Street, Oakland, California 94602

Table 1 Groundwater Analytical Data

649 Pacific Avenue Alameda, California

Well Number	Date Sampled	Well Elev (ft, MSL)	Depth to Water (ft)	Groundwater Elev. (ft, MSL)	TPHss EPA 8015 (ppb)	TPHg EPA 8015 (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl- benzene (ppb)	Xylenes (ppb)
MW-1	03/01/05	15.18	5.64	9.54	550	<50	<0.5	0.73	<0.5	<0.5
MW-2	03/01/05	15.21	5.60	9.61	<50	<50	<0.5	0.53	<0.5	<0.5
MW-3	03/01/05	15.11	5.71	9.40	<50	<50	<0.5	<0.5	<0.5	<0.5
MW-4	03/01/05	15.02	5.30	9.72	<50	<50	<0.5	<0.5	<0.5	<0.5
MVV-5	03/01/05	14.79	5.06	9.73	<50	<50	<0.5	<0.5	<0.5	<0.5

Notes:

TPHss = total petroleum hydro total petroleum hydrocarbons as Stoddard solvent

TPHg = total petroleum hydro total petroleum hydrocarbons as gasoline

ppb = parts per billion

EPA 8015 = analysis performed according to EPA Method 8015 modified

EPA 8020 = analyses for benzene, toluene, ethylbenzene, and xylenes performed according to EPA Method 8260B

< = not detected at or above specified detection limit shown

Table 2 Soil Analytical Data

649 Pacific Avenue Alameda, California

Boring Number	Date Sampled	Depth (feet)	TPHss EPA 8015 (ppm)	Benzene (ppm)	Toluene (ppm)	Ethyl- benzene (ppm)	Xylenes (ppm)
MW-1	01/17/05	5	<2.5	<0.025	<0.025	<0.025	<0.05
	01/17/05	10	380	<0.025	<0.025	<0.025	<0.05
	01/17/05	20	7	<0.025	<0.025	<0.025	<0.05
MW-2	01/17/05	5	<2.5	< 0.025	<0.025	< 0.025	<0.05
	01/17/05	20	<2.5	<0.025	<0.025	<0.025	< 0.05
MW-3	01/18/05	5	<2.5	<0.025	<0.025	<0.025	<0.05
	01/18/05	20	<2.5	<0.025	<0.025	<0.025	<0.05
MW-4	01/18/05	5	< 2 .5	< 0.025	<0.025	<0.025	<0.05
	01/18/05	20	<2.5	< 0.025	<0.025	<0.025	<0.05
MW-5	01/17/05	5	<2.5	< 0.025	<0.025	<0.025	<0.05
	01/17/05	20	<2.5	<0.025	<0.025	<0.025	<0.05

Notes:

TPHss = total petroleum hydrocarbons as Stoddard solvent

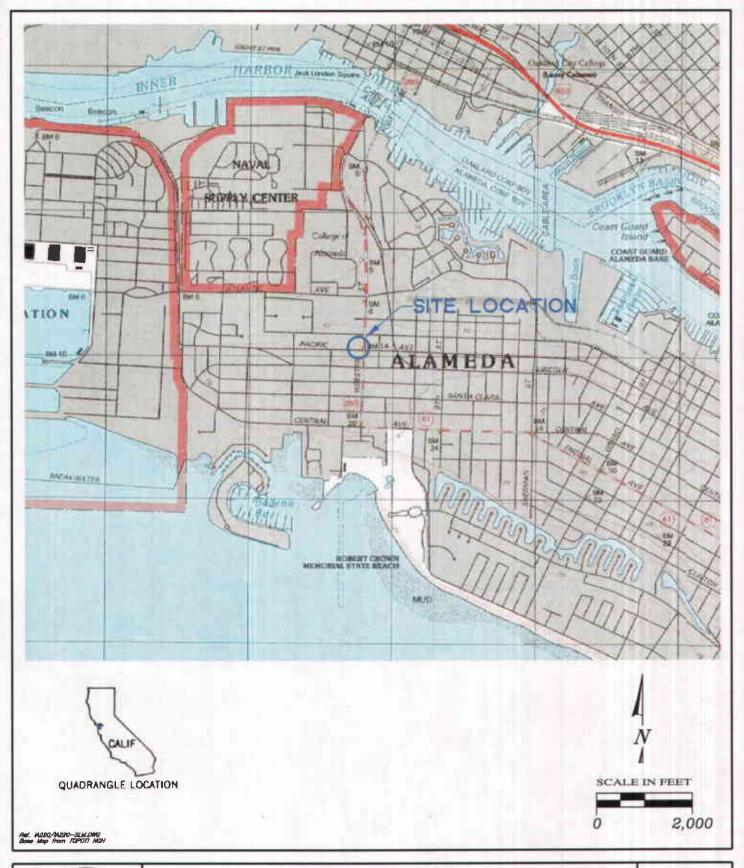
ppm = parts per million

EPA 8015 = analysis performed according to EPA Method 8015 modified

EPA 8020 = analyses for benzene, toluene, ethylbenzene, and xylenes performed according to

EPA Method 8260B

< = not detected at or above specified detection limit shown

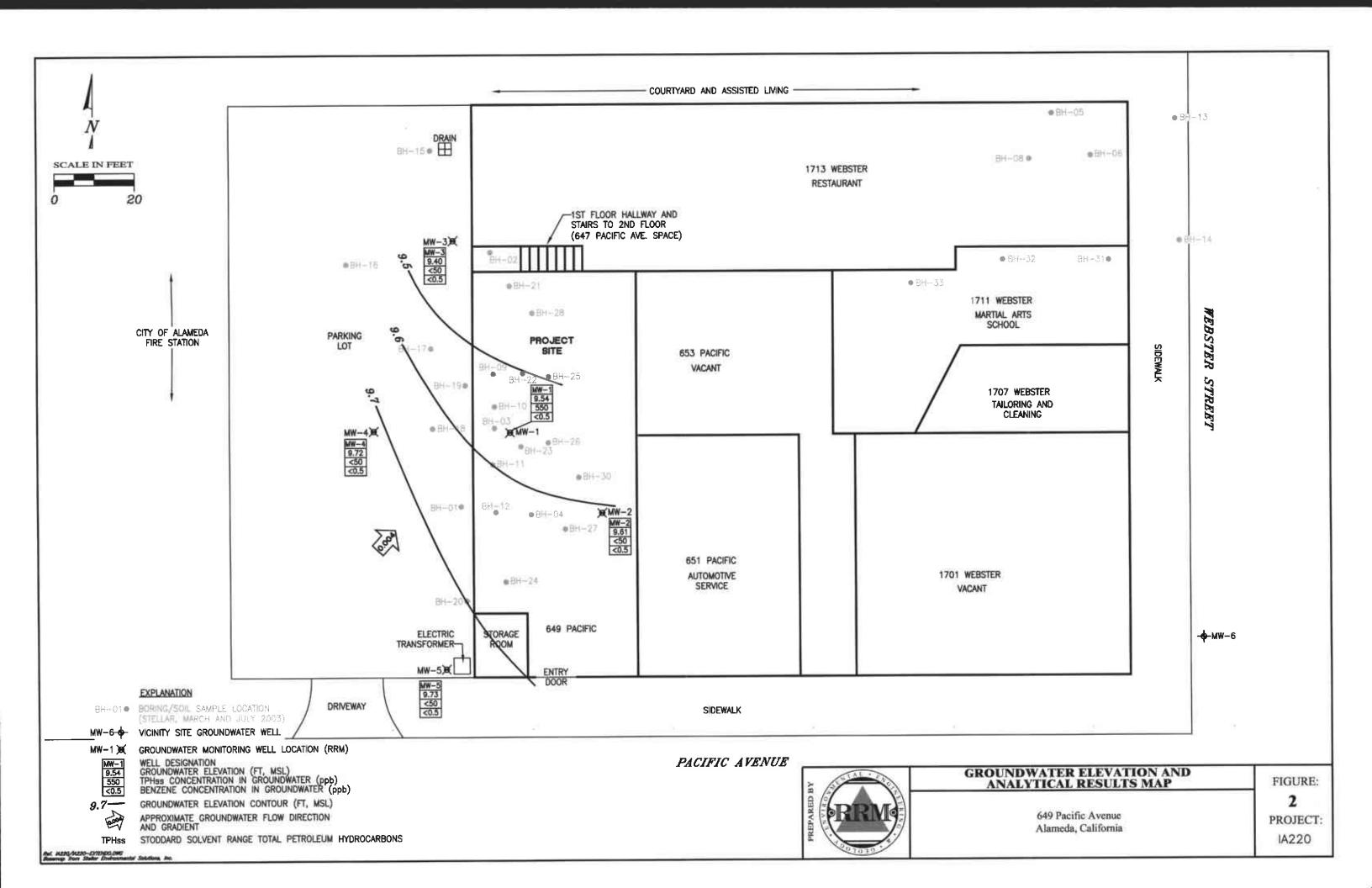


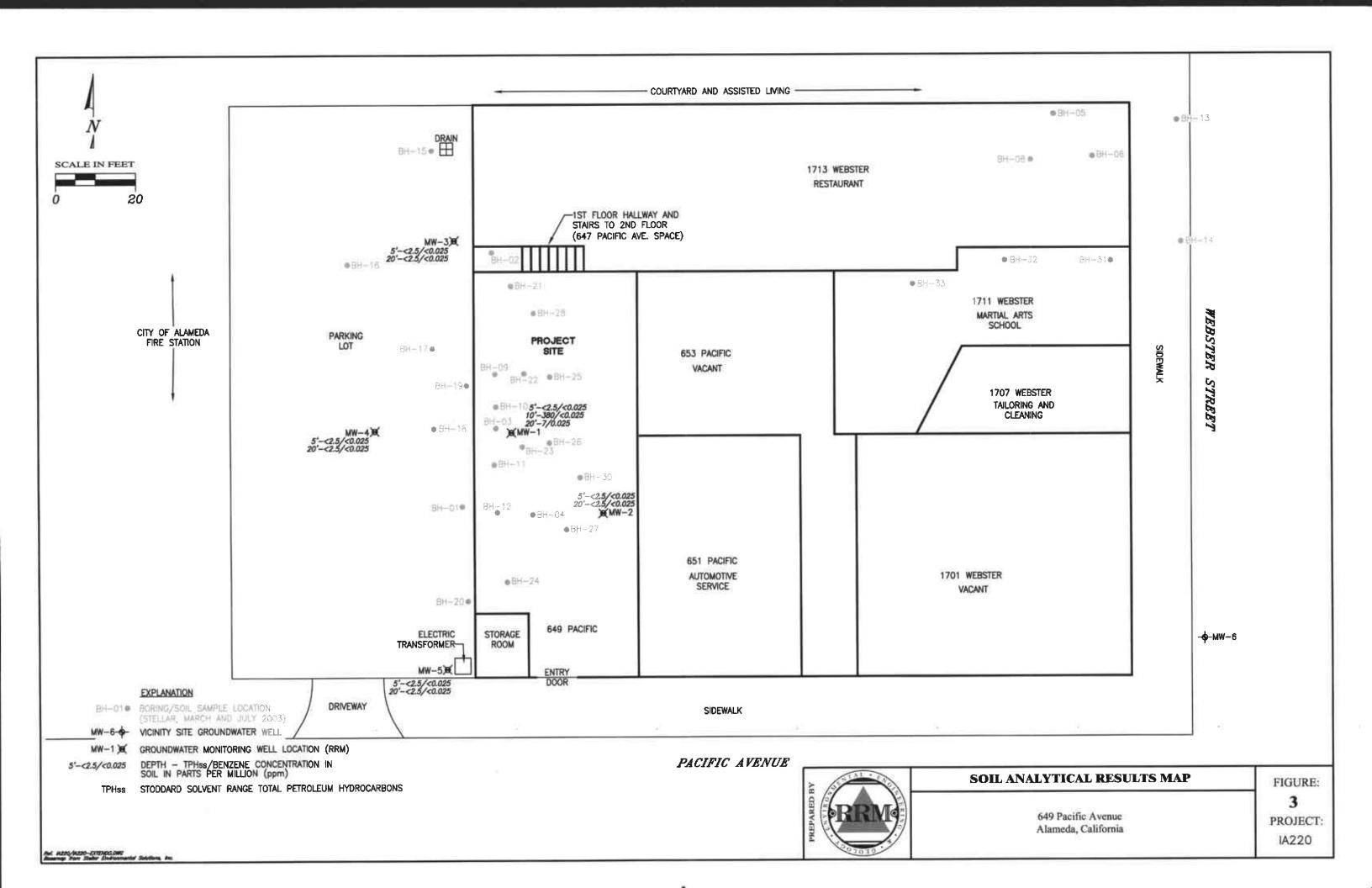


SITE LOCATION MAP

649 Pacific Avenue Alameda, California FIGURE:

PROJECT: IA220





ATTACHMENT A WELL INSTALLATION PERMITS



COUNTY OF ALAMEDA
PUBLIC WORKS AGENCY
WATER RESOURCES SECTION
399 Elmburst Street, Hayward, CA 94544-1395
James Yoo PH: (510) 670-6633 FAX: (510) 782-1939
FOR GENERAL DRILLING PERMIT INFO:
WWW.acgov.org/pwa/wells

FAX TRANSMITTAL

TO:

RIZM INC

DATE: 12-5-04

apper 1210-021

265-1269 & Conditive

FAX NO.:

(831) 49*y*

TRANSMITTING THE FOLLOW

SHEETS

DATED

TITLE/DESCRIPTION

TOTAL PAGES INCLUDING THIS SHEET.

FROM WATER RESOURCES SECTION

NAME:

JAMES YOO

TEL: (510) 670-6633

FAX: (510) 782-1939

E-MAIL: jamesy@acpwa.org

IF YOU EXPERIENCE PROBLEMS WITH THIS TRANSMISSION, PLEASE CALL ME.

REMARKS: FYI: EFFECTIVE NOVEMBER 1, 2004

SCHEDILING WORKANSPECTIONS

Alameda County Public Works Agency (ACPWA), Water Resources Section requires scheduling and inspection of permitted work. All drilling activities must be scheduled in advance. Availability of inspections will vary from week to week and will come on a first come, first served bases. To ensure inspection availability on your desired or driller scheduled date, the following procedures are required:

- Please contact George Bolton at 510-670-5594 to schedule the inspection date and time (You must have drilling permit
 approved prior to scheduling).
- Schedule the work as far in advance as possible (at least 5 days in advance); and confirm the scheduled drilling date(s)
 at least 24 hours prior to drilling.

Once the work has been scheduled, an ACPWA Inspector will coordinate the inspection requirements as well as how the Inspector can be reached if they are not at the site when Inspection is required. Expect for special circumstances given, all work will require the inspection to be conducted during the working hours of 8:30am to 2:30pm., Monday to Friday, excluding holidays.



WATER RESOURCES SECTION
399 RLMHURST ST. HAYWARD CA. 94544-1395
PHONE (510) 670-6633 Jumes Yoo

PAX (510) 781-1939 www.refewed.org
APPLICANTS: PLEASE ATTACH A SITE MAP FOR ALL DRILLING PERMIT APPLICATION
DESTRUCTION OF WELLS OVER 45 FEET REQUIRES A SEPARATE PERMIT APPLICATION

DRULING PERMIT APPLICATION

PAR ARRESO AND CONTRACTOR	·
FOR APPLICANT TO COMPLETE	FOR OTHICE USE.
LOCATION OF PROJECT	PERMIT NUMBER WO4-1465
All factic Ave.	WELL NUMBER
- Alamatat	APN
lest intersection of Webster Ct	PERMIT CONDITIONS
	Circled Permit Requirements Apply
Name Timber Del Propostios 666	**
Address 2424 Contral Aug. Phone 5/6-743-1141	A GENERAL
City Alamede CA Zip 94501	1. A perinit application should be infimitted as as to arrive at the ACPWA office five days prior to
APPLICANT	reposed starting date.
Name RRM Inc.	2. Submit to ACPWA within 60 days after completion of
Fax 831, 475, 214	vernitted original Department of Water Resources- Well Completion Report.
Address 29/2 Particle Dr. Phone 87/-475-924	1. Permit is void if partiest not begun within 90 days of
City Sente Coop CA Zip 95662	upprova) date
	B. WATER SUPPLY WELLS 1. Minimum surface scal discusses in two inches of
TYPE OF PROJECT	coment grout placed by tremie.
Well Construction George Investigation Cathodic Protection General	2. Minimum seal depth is 50 foot for municipal and
Water Supply Contamination	Industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.
Monitoring Well Destruction	C. GROUNDWATER MONITORING WILLS
PROPOSED WATER SUPPLY WELL USE	(/ INCLUDING PITZOMETERS
New Domestic Replacement Domestic	 Minimum surface seal thickness is two inches of centent grout placed by tremie.
Municipal Terigation	2. Minimum soal depth for monitoring wells is the
Industrial Other	maximum depth practicable of 20 feet.
DRILLING METHOD:	D. GEOTECHNICAL/CONTAMINATION
Mud Rotary Air Rotary Augor	Back(III bore hale by tremie with cornent grout or coment grout/state mixture. Upper two-three feet replaced in kind
Cable Other	or with compacted cuttings.
DRIELBR'S NAME GCCC DC! LLing	E. CATHODIC
	Fill hole anode zone with concrete placed by tremic. F. WELL DESTRUCTION
DRILLER'S LICENSE NO. C-57 "YESIGE	Send a map of work site. A separate permit is required
	for wells deeper than 45 feet.
WELL PROJECTS	(G) SPECIAL CONDITIONS—17641
Drill Hole Diameter S in. Maximum Casing Diameter 2 in. Denth 20 ft.	NOTE: One application must be submitted for each well or well
Surface Soal Depth 5 ft. Owner's Well Number MW -	destruction. Multiple borings on our application are acceptable
	for geotechnical and contamination investigations.
GEOTECHNICAL/CONTAMINATION PROJECTS Number of Borings Meximum	
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COMPLETION DATE /2 - 28 - 04	MAKE 10 x 10
,	APPROVED DAYE 25-04
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I hereby agree to comply with all requirements of this permit and Alameda County Ordinance	/ /3 11
APPLICANO'S SIGNATURE DATE /2 - 7	<u>-</u> 04 ([] [
PLEASE PRINT NAME MOST PAULS / KRM BUSILO	_ \ \
Rev.5-11-0	4



WATER RESOURCES SECTION 399 ELMHURST ST. HAYWARD CA. 94544-1395 PHONE (510) 670-6633 James You

FAX (510) 782-1939

www.acfewed.org

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

DRILLING PER	MIT APPLICATION
FOR APPLICANT TO COMPLETE	FOR OFFICE USE.
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Alameda	APN
(cot interesting of Wessey (t)	PERMIT CONDITIONS
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Address 2424 Control Ave Plione 510-748-1141	1. A permit application should be submitted so as to
City Alamada (A 2ip Gy To)	mitive at the ACPWA office five days prior to
APPLICANT	proposed starting date. 2) Submit to ACPWA within 60 days after completion of
Name_RRM_TMC	permitted original Department of Water Resources-
Address 29/2 Portule Dr. Phone 87/-475- 114/	Well Completion Report.
Address 29/2 Fortule Dr. Phono 87/-475- 9245 City Sc. 42 Cut 2 CA Zip 95062	3. Permit is void if project not begun within 90 days of
	approval date B. WATER SUPPLY WELLS
	1. Minimum surface seal thickness in two inches of
TYPE OF PROJECT Well Construction Geotechnical Investigation	comeat grout placed by trends.
Well Construction General Investigation Cuthodic Protection General	 Minimum seni depth is 50 feet for annicipal and industrial wells or 20 feet for domestic and irrigation
Water Supply Contamination	wells rules in leaser depth in specially approved,
Modification Well Description	7 C. GROUNDWATER MONITORING WELLS
PROPOSED WATER SUPPLY WELL USE	INCLUDING PIEZOMETERS
New Domestic Replacement Domestic	Minimum surface seal thickness is two inches of coment grout placed by trenile.
Municipul Irrigation	2. Minimum seat depth for monitoring wells is the
Industrial Other	maximum donth rescticable or 20 feet.
DRILLING METHOD:	D. GEOTECHNICAL/CONTAMINATION
Mud Rotary Air Rotary Auger	Backfill bore hole by tremie with cement grout or cement grout/sund mixture. Upper two-three feet replaced in kind
Cablo Other	or with compacted outlings.
DRILLER'S NAME Greer Drilling	E. CATRODIC
3	Fill hole anode zone with concrete placed by tremic.
Driller's Lichnse no. C-57 #485165	F. WELL DESTRUCTION Sond a map of work site. A separate permit is required
	for wells deuper than 45 feet.
WELL PROJECTS	G. SPECIAL CONDITIONS
Drill Hole Diamoter & in. Munimum	NOTE OF THE PARTY
Casing Disputer 2 in Death 29 e	NOTE: One application must be submitted for each well or well destruction, Multiple borings on one application are accomplic
Surface Scal Depth S n. Owner's Well Number Mw-2	for geotechnical and contamination investigations.
GEOTECHNICAL/CONTAMINATION PROJECTS	
Number of Borings Maximum Hole Diameter in. Depth ft.	
Hole Diameter in. Depthft.	
STARTING DATE	
· · · · · · · · · · · · · · · · · · ·	1000
COMPLETION DATE 12-28-04	AM 17-9-CG
	APPROVEDDATE
I hereby agree to comply with all requirements of this permit and Alameda County Ordin	/ W
APPLICANT'S SIGNATURE DATE 12	·7·04 V
PLEASE PRINT NAME Must Paulus / FRM ROVS.	



WATER RESOURCES SECTION
399 ELMHURST ST. HAYWARD CA. 94544-1395
PHONE (510) 670-6633 Janus Yoo

PAX (\$10) 782-1939 WWW.aciewed.org
APPLICANTS: PLEASE ATTACH A SITE MAY FOR ALL DRILLING PERMIT APPLICATIONS
DESTRUCTION OF WELLS OVER 45 PRET REQUIRES A SEPARATE PERMIT APPLICATION

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE	FOR OFFICE USE
I ACATION AS BRAIDS	
LOCATION OF PROJECT	PERMIT NUMBER W04-12-6
Alamada	WELL NUMBER
	APN
(at intersection of Webster Ct)	The Philips have been a second as a second
	PERMIT CONDITIONS
CLIENT	Circled Ponnit Requirements Apply
Name Timber Del Properties LLC	(A. GINERAL
Address 2424 Control Ave Phone 510-748-1141	I. A permit application should be submitted so as to
City Alamada CA Zip 94.501	arrive at the ACPWA office five days prior to
APPLICANT	propused starting date.
Name RRM Inc	Submit to ACPWA within 60 days after completion of
Fox \$ 31, 475, 314,	[
Address 3912 Partok D. Phono 821.475. 314	Well Completion Report.
City Sent Cour 1 A Zip 95062	3. Pennit is void if project not begun within 90 days of approval date
· · · · · · · · · · · · · · · · · · ·	B. WATER SUPPLY WELLS
TYPE OF PROJECT	1. Minimum surface soul thickness is two inches of
99.0.0	coment growt placed by trende
Cathodic Protection General Investigation	2. Minimum avail douth in 50 feet for municipal and
Water Supply Contamination	Industrial wells of 20 feet for domestic and irrination
Monitoring Well Destruction	wells unless a lessor depth is specially approved. C. GROUNDWATER MONITOLUNG WELLS
	INCLUDING PLEZOMETERS
PROPOSED WATER SUPPLY WELL USE	1. Minimum surface sent thickness is two inches of
New Domestic Replacement Domestic Municipal artication	content grow placed by tremic.
* * · · · · ·	2. Minimum soul depth for monitoring wells is the
Industrial Other	maximum denth practicable or 20 force
DRILLING MITHOD:	D. GEOTECHNICAL/CONTAMINATION
Mand Rotary Air Rotary Auger	Backfill bore hale by fromle with comeat groun or cement
Cable Odior	grous/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings.
DON'T White State O State	E. CATHODIC
DRILLIER'S NAME Gress Drilling	Fill hole anode zone with concrete placed by tremic.
DRILLER'S LICENSE NO. C-57 4485165	F. WELL DESTRUCTION
105/08	Send a map of work site. A separate permit is required
	for wells deeper than 45 foot.
WELL PROJECTS	G. SPUGLAL CONDITIONS MLH 1
Drill Hole Dismeter in. Meximum	NOTE: One application must be submitted for such well or well
Casing Diameter 2 in. Depth 20 n. Surface Scal Depth 5 ft. Owner's Well Number 204.	destruction. Multiple horizon on one application are acceptable
Surface Scal Depth ft. Owner's Well Number MW - 3	for geotechnical and contamination investigations.
GEOTECHNICAL/CONTAMINATION PROJECTS	
Number of Borings Maximum	
Hole Diameterin. DepthR.	
STARTING DATE	· · · · · · · · · · · · · · · · · · ·
COMPLETION DATE 12-28-04	DEDU
	ADDITION AND THE PROPERTY OF T
P)	APPROVED DATE.
I hereby agree to comply with all requirements of this permit and Alemeda County Ordinance	o No. 73-68.
	/ (1.10
DATE 1 - C	
PLEASE PRINT NAME Mart Parks Rev.S-11-	\ \\ \\
Rev.S-11-	ν ₁ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
	$\sim M$



WATER RESOURCES SECTION
399 ELMHURST ST. HAYWARD CA. 94544-1395
PHONE (510) 670-6633 James You

FAX (510) 782-1939 WWW.refewed.org
APPLICANTS: PLEASE ATTACH A SITE MAP FOR ALL DIVILING PERMIT APPLICATIONS
DESTRUCTION OF WILLS OVER 45 FERT REQUIRES A SEPARATE FERMIT APPLICATION

DRILLING PERMIT APPLICATION

•	·
FOR APPLICANT TO COMPLETE	FOR PIPICITALISE
LOCATION OF PROJECT	PERMIT NUMBER W04-1468
649 Pacitie Ave.	WELL NUMBER VVV / / C U
Alamede	APN
(cot intersection of Webster Ct)	PERMIT CONDITIONS
CLIENT	Circled Permit Requirements Apply
Name Timber Del Properties LLC	C CENTER LY
Address 2424 Contral Ave Phone 516-748-1141	GENERAL 1. A posmit application should be submitted so as so
City Alamada SA Zip 94501	nrive at the ACIWA office five days prior to
	proposed earling date.
APPLICANT Name RRm Fm C	2. Submit to ACPWA within 60 days after completion of
Pax 831 - 475 - 214 /-	permitted original Department of Water Resources-
Address 35/2 Portale Dr. Phone 871-475. 8149/	Well Completion Report. 3. Permit is void if project not begun within 90 days of
City Sente Crop (A Zip 95062	aphlone gant a biolect not begin atom an days of
	B. WATER SUPPLY WELLS
TYPE OF PROJECT	I. Minimum surface seal thicknoss is two inches of
Well Construction Georgebuiga Investigation	coment grout placed by fremie.
Cathodic Protection General	 Minimum scal dopth is 50 foot for municipal and industrial wells or 20 feet for demostic and irrigation
Water Supply Contamination	wells unless a lesser depth is specially approved.
Monitoring Well Destruction	C. GROUNDWATER MONITORING WELLS
PROPOSED WATER SUPPLY WELL USE) INCLUDING PIEZOMETERS
New Domestic Replacement Domestic	1. Minimum surface seal thickness is two inches of
Manicipal Intestion	content grout placed by tremie. 2.Minimum sent dopth for monitoring wells is the
Industrial Other	maximum depth practicable or 20 feet.
DRILLING METHOD:	D. GEOTECHNICAL/CONTAMINATION
	Backfill bore hole by tremie with coment grout or content
Cable Other	grout/ward mixture. Upper two-three feet replaced in kind or with compacted cuttings.
	E. CATHODIC
DRILLER'S NAME Gress Drilling	Fill hole enote zone with concrete placed by tremie.
DRILLER'S LICENSE NO. C.S7 4485165	F. WELL DESTRUCTION
DIOLECTION DE MEI	Send a roup of work nite. A reparate permit in required
	G. SPECIAL CONDITIONS
WELL PROJECTS C	- Thurst
Drill Hole Distractor 3 in. Maximum Cusing Distractor 2 in. Depth 2 of.	NOTE: One application must be submitted for each well or well
Cusing Dismeter 2 in. Depth 20 ft. Surface Scal Depth 5 ft. Owner's Well Number WW-C/	destruction. Multiple borings on one application are acceptable
The state of the s	for geolechnical and contentination investigations.
GEDTECHNICAL/CONTAMINATION PROJECTS	
Number of Boxings Maximum	
Hole Diameter in. Depth ft.	
STARTING DATE 12 - 27 - 04	
	10.00
COMPLETION DATE 12-28-04	11M1 1/4974
'	APPROVED DATE
I hereby agree to comply with all requirements of this permit and Alameda County Ordina	72.60 / / V
APPLICANT'S SIGNATURE DATE /2.	7.09 \
PLEASE PRINT NAME Mat Parls: / FRM REV.S.	
PLEASE FIGHT NAME (GO (CO) (CO)	1-04



WATER RESOURCES SECTION 399 ELMHURST ST. HAYWARD CA. 94544-1395 PHONE (519) 670-6633 James You

FAX (510) 782-1939 www.acfewed.org applicants: Please attach a stik map for all drilling prhmit applications destruction of wills over 45 fert requires a suparate Permit application

DRILLING PERMIT APPLICATION FOR APPLICANT TO COMPLETE FOR OFFICE USE PERMIT NUMBER 400 **WELL NUMBER** APN_ PERMIT CONDITIONS Circled Fermit Requirements Apply CLIENT GINERAL Phone 5/0-741-1141 Zip 94.5-1 1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to groposed scarting data. **APPLICAN** 2. Submit to ACPWA within 60 they after completion of Name permitted original Department of Water Resources-Fax 831 - 475- 2141 Well Completion Report, Address 2912 Partule 0 . Phone 67/-475- 824 3. Permit is void if project not begun within 90 days of approviil date B. WATER SUPPLY WELLS 1. Minimum surface sent disckness is two inches of TYPE OF PROJECT coment grout placed by tremia. Woll Construction Gontechnical Investigation 2. Minimum sent dopit is 50 feet for municipal and Ochodic Protection Conoral Industrial wells or 20 feet for domestic and irrigation Water Supply Contamination wells unless a lesser depth is specially approved. Monitoring Well Destruction GROUNDWATER MONITORING WELLS INCLUDING PLEZOMETERS PROPOSED WATER SUPPLY WELL USE 1. Minimum surface seat thickness is two inches of **New Domestic** Replacement Domestic council grout placed by tremic. Municipal Irrigation 2. Minimum sent depth for monitoring wells is the Industria) Other muximum depth practicable of 20 feet. D. GEOTECHNICAL/CONTAMINATION **DRILLING METHOD:** Backfill bare hale by tremie with coment grout or coment **Mud Rotary** Air Rotery grant/sand mixture. Upper two-three feet replaced in kind Cable Other or with compacted outlings. E. CATHODIC DRILLER'S NAME COLCE Fill hole anode zone with concrete placed by tremie, y. Well destruction DRALLER'S LICENSE NO. $C \cdot S7$ Send a map of work site. A reparate permit is required for wells deeper than 45 feet SPICIAL CONDITIONS WELL PROJECTS **Drill Hole Diameter** Maximum Depth 20 NOTE: One application must be submitted for each well or well Casing Diameter destruction. Multiple borings on one application are acceptable

GEOTECHNICAL/CONTAMINATION PROJECTS Number of Borings

Hole Diameter

Surface Scal Dapith

PLEASE PRINT NAME

Maximum

Owner's Well Number MW-S

Donth

/2 - 27 - 64 STARTING DATE_

COMPLETION DATE 12-28-04

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

APPLICANT'S SIGNATURE

Rev.5-11-04

APPROVED

for geotechnical and contamination investigations.



ALAMEDA COUNTY PUBLIC WORKS AGENCY WATER RESOURCES SECTION 399 ELMHURST ST. HAYWARD, CA. 94544-1395 PHONE (510) 670-6633 James Yoo FAX (510) 782-1939

PERMIT NO. W04-1265-1269

WATER RESOURCES SECTION GROUNDWATER PROTECTION ORDINANCE MW#1-GENERAL CONDITIONS: MONITIORING WELL/PIEZOMETERS

- 1. Prior to installation of any monitoring wells into any public right-of-ways, it shall be the applicants responsibilities to contact and coordinate a Underground Service Alort (USA), obtain encroachment permit(s), excavation permit(s) or any other permits required for that City or to the County and follow all City or County Ordinances. It shall also be the applicants responsibilities to provide to the Cities or to Alameda County a Traffic Safety Plan for any lane closures or detours planned. No work shall begin until all the permits and requirements have been approved or obtained.
- 2. The minimum surface seal thickness two inches of cement grout placed by tremic.
- 3. All monitoring wells shall have a minimum surface cement seal depth of five (5) feet or the maximum depth practicable or twenty (20) feet.
- 4. Wells shall have a Christy box or similar structure with a locking cap or cover. Well(s) shall be kept locked at all times. Well(s) that become damaged by traffic or construction shall be repaired in a timely manner or destroyed immediately (through permit process). No well(s) shall be left in a manner to act as a conduit at any time.
- 5. Permitte, permittee's, contractors, consultants or agents shall be responsible to assure that all material or waters generated during drilling, boring destruction, and/or other activities associated with this Permit will be safely handled, properly managed, and disposed of according to all applicable federal, state, and local statues regulating such. In no case shall these materials and/or waters be allowed to enter, or potentially enter, on-or off site storm sewers, dry wells, or waterways or be allowed to move off the property where work is being completed.
- 6. No changes in construction procedures or well type shall change, as described on this permit application. This permit may be voided if it contains incorrect information.
- 7. Drilling Permit(s) can be voided/ canceled only in writing. It is the applicants responsibilities to notify Alameda County Public Works Agency, Water Resources Section in writing for an extension or to cancel the drilling permit application. No drilling permit application(s) shall be extended beyond ninety (90) days from the original start date. Permit is valid from December 27 to December 28, 2004. Applicants may not cancel a drilling permit application after the completion date of the permit issued has passed.
- 8. Compliance with the above well-scaling specifications shall not exempt the well-scaling contractor from complying with appropriate State reporting-requirements related to well destruction (Sections 13750 through 13755 (Division 7, Chapter 10, Article 3) of the California Water Code). Contractor must complete State DWR Form 188 and mail original to the Alameda County Public Works Agency, Water Resources Section, within 60 days. Including: permit number and site map.
- 9. Permittee shall assume entire responsibility for all activities and uses under this permit and shall indemnify, defend and save the Alameda County Public Works Agency, its officers, agents, and employees free and harmless from any and all expense, cost, liability in connection with or resulting from the exercise of this Pennit including, but not limited to, properly damage, personal injury and wrongful death.
- 10. Applicant shall contact George Bolton for a inspection time at 510-670-5594 at least five (5) working days prior to starting, once the permit has been approved.

ATTACHMENT B FIELD AND LABORATORY PROCEDURES

ATTACHMENT B FIELD AND LABORATORY PROCEDURES

Soil Boring and Groundwater Monitoring Well Installation Procedures

Soil borings and groundwater monitoring wells were permitted and installed in accordance with state and local guidelines using a subcontracted state licensed driller. The borings were drilled using 8-inch diameter hollow-stem augers. A RRM Inc. (RRM), geologist logged the borings from soil samples and auger cuttings. Descriptive information denoted on the boring logs includes soil, groundwater, contaminant, and well installation data. Drilling and sampling equipment was steam-cleaned or cleaned with trisodium phosphate prior to and between uses. Selected soil borings were converted to 2-inch diameter groundwater monitoring wells. Soil borings not converted to wells were backfilled with cement grout.

The borings were continuously sampled for logging purposes. Soil samples for chemical analysis purposes were collected at 5-foot depth intervals or change in earth materials. Soil samples for chemical analyses were collected from split-spoon samplers equipped with 2-inch diameter brass liners. The brass liners were capped with Teflon and plastic end caps and placed in plastic bags. The brass liners were stored in iced coolers and transported to a state certified laboratory, accompanied with chain-of-custody documentation.

Groundwater monitoring wells were constructed to monitor discrete water bearing strata. Well construction details were denoted on the boring logs in the field. Well construction materials consisted of a cement grout, 2-inch diameter flush-threaded Schedule 40 PVC casing and 0.020-inch factory-slotted screen, 2 x 12 graded sand pack, a bentonite and cement grout surface seal, and a locking cap and protective vault box. After well completion, well elevations were surveyed to the nearest 0.01 foot relative to mean sea level datum by a licensed surveyor.

Field Hydrocarbon Screening Procedures

Field hydrocarbon screening procedures consisted of measuring organic vapor concentrations using a photo-ionization detector (PID). The procedure consisted of getting approximately 30 grams of soil and testing the sample with a pre-calibrated photo-ionization detector using a 100 ppm isobutylene standard (in air).

Well Development/Groundwater Sampling Procedures

Well development was performed utilizing surge block/swab and groundwater extraction techniques. Well development was performed until the majority of suspended fines were removed or until approximately ten casing volumes were removed. Well development documentation consisted of recording data including: time, groundwater and well depth, turbidity, gallons removed, and well stabilization parameters (pH, conductivity, and temperature). Development and purge waters were stored in DOT approved 55 gallon drums pending disposal at a state licensed facility.

Groundwater sampling procedures consisted of initially measuring and documenting the water level in each well and checking each well for the presence of separate-phase hydrocarbons (SPH) using an oil/water interface probe or a clear Teflon bailer. None of the wells contained SPH, and were purged a minimum of four casing volumes or until dry. During purging, well stabilization parameters (temperature, pH, and electrical conductivity) were monitored. After 80% recovery of the water levels, groundwater samples were collected with Teflon bailers and placed into appropriate EPA-approved containers. Sampling equipment was cleaned with tri-sodium phosphate between uses. The samples were labeled, logged onto chain-of-custody documents, and transported on ice to the laboratory using appropriate chain-of-custody documentation.

Laboratory Procedures

Selected soil and groundwater samples were analyzed for the presence of petroleum hydrocarbons calculated as Stoddard solvent (TPHss), and benzene, toluene, ethylbenzene, and xylenes (collectively BTEX). Groundwater samples also were analyzed for petroleum hydrocarbons calculated as gasoline (TPHg). These analyses were performed according to EPA Methods 8015 (modified), and 8020. The methods of analysis for the soil and groundwater samples are documented on the certified analytical reports presented as Attachment D.

ATTACHMENT C BORING LOGS, GROUNDWATER SAMPLING FIELD DATA SHEETS. AND WELL ELEVATION SURVEY DATA



UNIFIED SOIL CLASSIFICATION SYSTEM ASTM D2487

	MA IOR DIVISIONS SYMBOL/							
	MAJOR D	IVISIONS	GRAPHIC		DESCRIPTION			
	GRAVELS	Clean gravels with little or	GW	00000	Well graded gravels, gravel—sand mixtures			
<i>SOILS</i> #200 sieve)	(More than 50%	no fines	GP	5000000 5000000 5000000 5000000	Poorly graded gravels, gravel—sand mixtures			
<i>SOIL</i> :	of coarse fraction is	Gravels with over 12%	GM	000000	Silty gravels, poorly graded gravel-sand-silt mixtures			
COURSE GRAINED SOILS weight larger than #200	larger than the #4 sieve size)	fines	GC		Clayey gravels, poorly graded gravel—sand—clay mixtures			
RSE G	SANDS	Clean sands with little or	SW		Well graded sands, gravelly sands			
<i>COUP</i> (>50% by weigh	(More than 50% of coarse fraction is	no fines	SP		Poorly graded sands, gravelly sands			
		Sands with over 12% fines	SM		Silty sands, poorly graded sand—silt mixtures			
<u></u>	smaller than the #4 sieve size)		sc		Clayey sands, poorly graded sand-clay mixtures			
(evi		ML		Inorganic silts and very fine sands, silty or clayey fine sands				
<i>SOILS</i> #200 sieve)	SILTS AND CLAYS (liquid limit less than 50%)		CL		Inorganic clays of low to medium plasticity: gravelly, sandy or silty clays; lean clays			
_		OL		Organic clays and organic silty clays of low plasticity				
FINE GRAINED SOILS smaller than #200 s		MH		Inorganic silts, micaceous or diatomacious fine sandy or silty soils, elastic silts				
FINE GRAINED (>50% smaller than	SILTS AND (liquid limit great		СН		Inorganic clays of high plasticity, fat clays			
) <)		-	ОН		Organic clays of medium to high plasticity, organic silts			
	HIGHLY ORGANIC	SOILS	Pt		Peat and other highly organic soils			

GRAIN-SIZE SCALE

200 40 10 4 3/4" 3" 12" SAND GRAVEL	
SAND CRAVEL	
	DULDERS
FINE MEDIUM COURSE FINE COURSE	IULDEKS



WELL/BORING LOG KEY TO ABBREVIATIONS

WELL/BORING COMPLETION



Annular seal; cement grout

Slotted well screen section

Solid well section



Bentonite seal



Annular sand pack

MOISTURE

D Dry

DP Damp

M Moist

W Wet (Sands and Gravels)

S Saturated (Silts and Clays)

<u>GROUNDWATER</u>

 \blacksquare

Stabilized Groundwater Level

 ∇

First Encountered Groundwater

DENSITY (blows/foot - Cal Mod Sampler)

-Sands and Gravels
0-5 -Very loose

-Silts and Clays
0-2 -Very

0-5 -Very loose 0-2 -Very soft 5-13 -loose 2-4 -Soft

 13-38
 -Medium dense
 4-9
 -Firm

 38-63
 -Dense
 9-17
 -Stiff

OVER 63 -Very dense 17-37 -Very stiff 37-72 -Hard

OVER 72 -Very hard

<u>FIELD TEST</u>

SOIL SAMPLE NUMBER

PID Photo-ionization detector

FID Flame-ionization detector

B-1-5 MW-1-5 B-Sample #-Depth in feet (for borings)
MW-Sample #- Depth in feet (for Wells)

RECOVERY / SAMPLE INTERVAL

SAMPLE INTERVAL — Attempted sample interval

RECOVERY - Sample retained within sample interval

NO RECOVERY - Sample not retained within sample interval

GRAPHIC

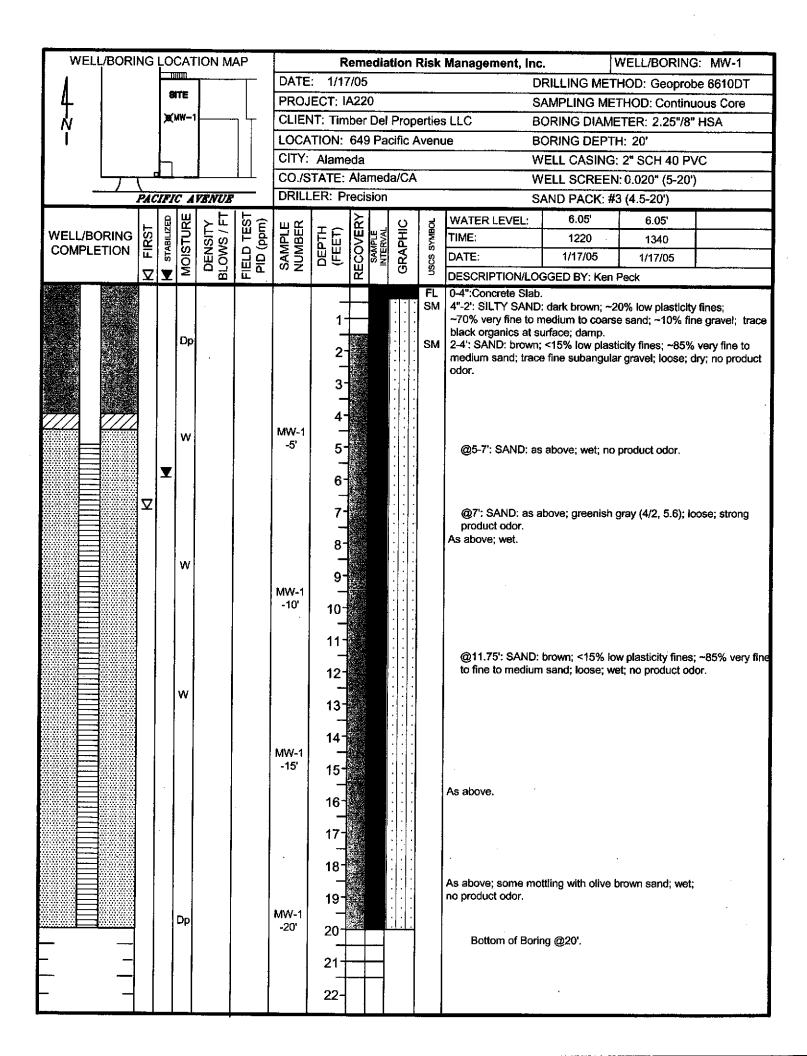
No Recovery——Sample Interval

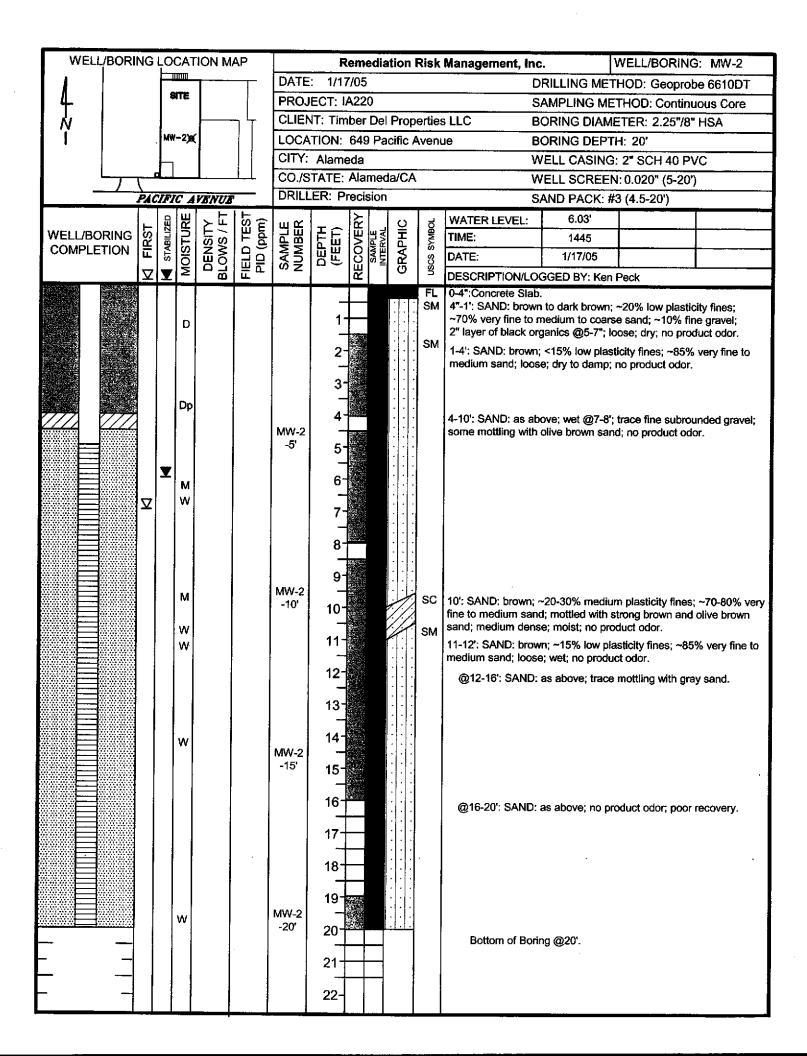
EXPLANATION AND ABBREVIATIONS

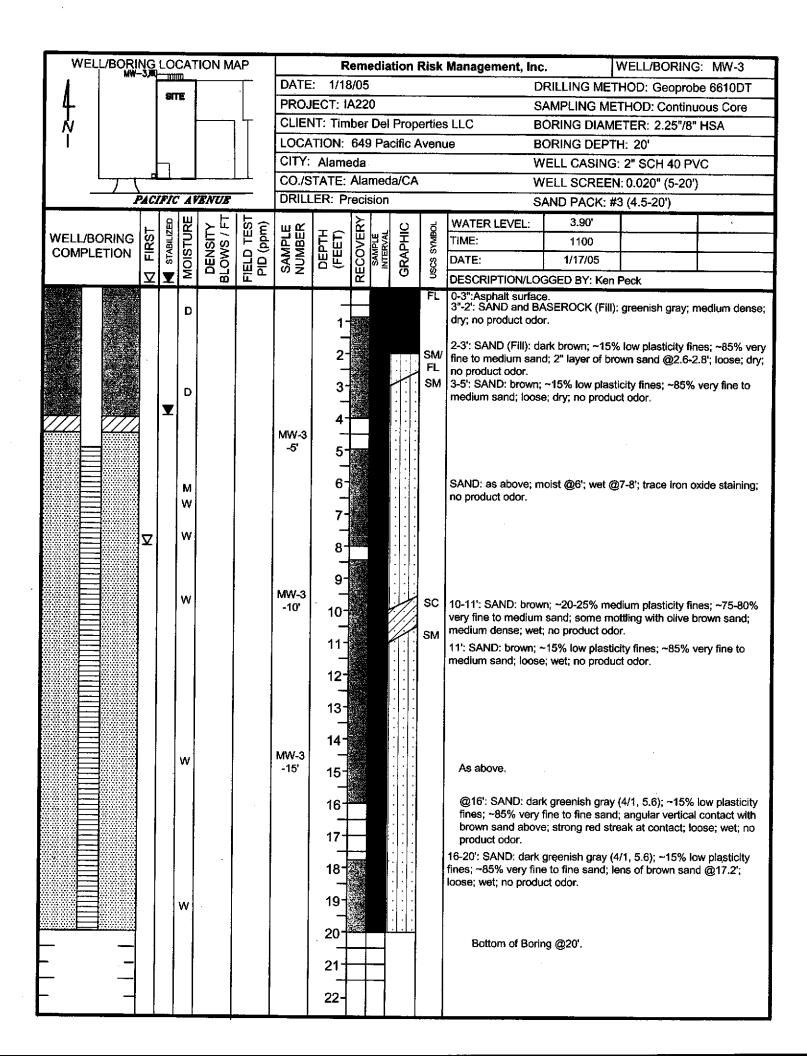
 ${\sf USCS\ SYMBOL\ =\ Unified\ Soil\ Classification\ System}$

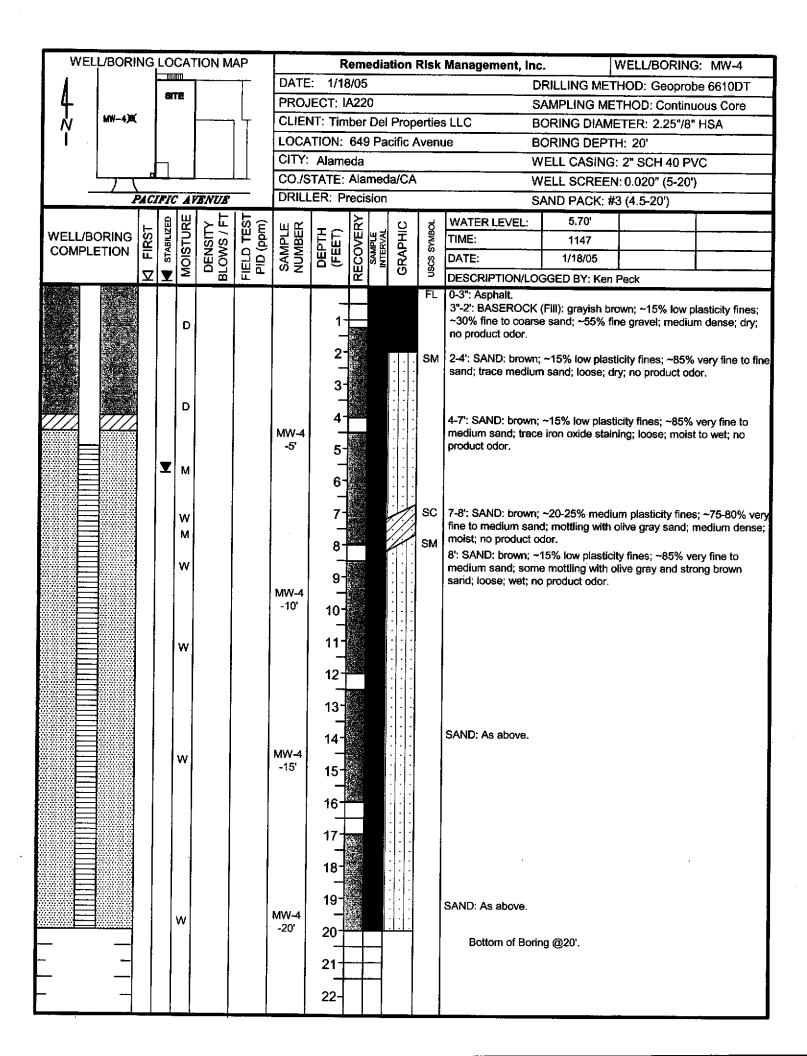
MSL = Mean Sea Level

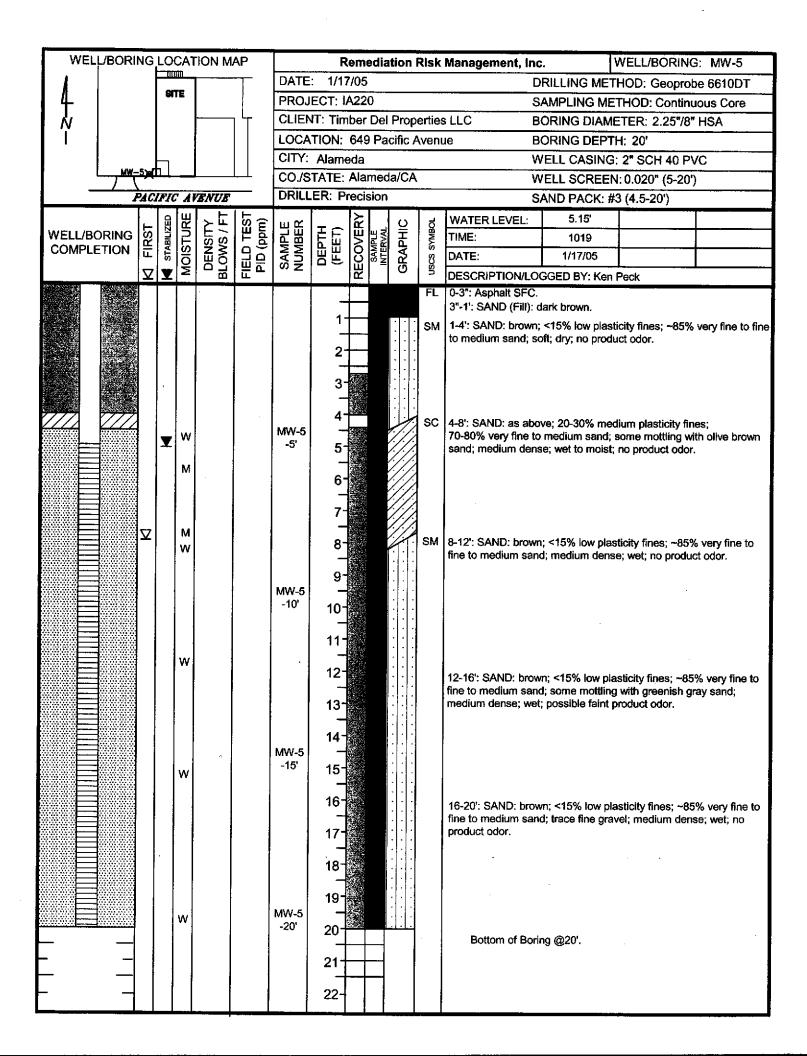
2.5YR 6/2 = Munsel Color Chart Designation













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General Information

Well Development Form

Well Construction Information

Well Development Summary

Date: 3-1-05 Well ID: mw-1	Well Diameter: 2.	Estimated Purge: 25.3
Station / Project #: TA220	Well Material: SUK 40 PVC	Actual Purge: 25.0
Site Address: 649 PACIFIC AUE.	Well Total Depth: 20'	Well Type:
City: NYAMEDA	Screen Interval: 20-5	Groundwater Monitoring Well: X
County / State: NAMEDA /CA	Filter Pack Interval: 20 - 4.5	Groundwater Extraction Well:
Field Technician: $\alpha / \delta A$	Filter Pack Material: #3	Sparge/Dual Purpose Well:

Well Development Method

Submersible Pump	Bailer	Surge Block / Swab_X	Other GAS TRASH PUMP of CHECK UNLI
			KND CLEAR DISPOSITION FUBLIC

Well Development Data

TIME	DEF	TH	GALI	LONS		ME	ASUREM	ENTS	
Start	To Water	To Bottom	Pumped	Total	pН	Conductivity	Temp(%	Turbidity	Notes
1021	5.10 TOL 5.64 TOS	18.89						. «	
1400			2-5	3.7	عر.٦	383	63.6	HERRY	DIC. Brown
1404			2.5	5.0	1.53	275	6 5 . (• •	
1406			2.5	7-5	7.29	351	65,4	***	+1
1407			2.5	(0,0	1.24	314	GC.(
1409			25	(2-7	719	275	66.0	1.	Ç
1410			25	15.0	7.98	267	66.1	li	4
M12			2.5	17.5	705	270	66.4	mod	11
1413			2.5	20	7.03	266	664	u	W
1415			25	22.5	6.13	266	66.6	//	4
1416			2.5	25.0	6.94	263	666	light	4

Signature:

RRM, J

G. Th. 142



Well Development Form

General Information

Well Construction Information

Well Development Summary

Date: 03-01-05 Well ID: MW-2	Well Diameter: 2"	Estimated Purge: 25.1
Station / Project #: = A220	Well Material: SCH 40 PUC	Actual Purge: 22.5
Site Address: 649 PAGER LUB	Well Total Depth: 201	Well Type:
City: ALAMEDA	Screen Interval: 20-5	Groundwater Monitoring Well:
County / State: NAMEDA /CA	Filter Pack Interval: 20 -4.5	Groundwater Extraction Well:
Field Technician: ct/sA	Filter Pack Material: #3	Sparge/Dual Purpose Well:

Well Development Method

		***************************************	· · · · · · · · · · · · · · · · · · ·	
Submersible Pump	Bailer	Surge Block / Swab ×	Other GAS TRASH PUMP W	HECK UNLVE
			CHIST CHANGE AND	
•			B 445	

Well Development Data

TIME	DEPTH		GALLONS		MEASUREMENTS				
Start	To Water	To Bottom	Pumped	Total	pH (Gonductivity.		Turbidity	Notes
(017	5.19 TOC 5.60 TOB	14.20			1	1/6m) (-	· · · · · · · · · · · · · · · · · · ·		
1252	,		2.5	2.5	7.14	604	63.5	HEAVY	BROWN
1255	-		2.5	5.0	2.22	442	64.4	1	
1256			2.5	7.5	7.43	413	65.0		
1259			2.5	(0.0	7.30	364	65, 2		
1301		·	2.5	12.5	7.24	389	65. T		
1303	· .		2.5	15.0	7.15	367	65.9		4
1305			2.5	17.5	7.01	379	66.0		CIGHT BROWN
1330		·	2.5	20.0	6.45	374	63.1		1
1331	·		2.5	25.0 22.5	-6.36	425	64.4	1	
į.		Λ							

Signature:

RRM, Inc.

SLAPLE TIME : 1238



Well Development Form

General Information

Well Construction Information

Well Development Summary

Date: 03-01-05 Well ID: NW-3	Well Diameter: 2 '	Estimated Purge: 24.7
Station / Project #: TA220	Well Material: SCH 40 PUC	Actual Purge: 7.5
Site Address: 649 PACIFIC WE	Well Total Depth: 20	Well Type:
City: ALAMEDA	Screen Interval: 20-5	Groundwater Monitoring Well: X
County/State: LLMEN /CX	Filter Pack Interval: ~0 - 4.5	Groundwater Extraction Well:
Field Technician: CT /ok	Filter Pack Material: #3	Sparge/Dual Purpose Well:

Well Development Method

Submersible Pump	Bailer	Surge Block / Swab	Other GAS TRASH PUMP W	CHECKUN
				

Well Development Data DEPTH TIME **GALLONS MEASUREMENTS** Start Conductivity \ Temp To Water To Bottom Pumped Total pΗ **Turbidity** Notes 16. 37 TOC 5.45 TOC 0135 5.71 TOB 16.58 703 SHAD HELVY 1446 2.5 08.3 786 67.6 2.5 BROWN 1457 2.5 836 5.0 6.85 71.0 1504 877 2.5 7.5 75.9 7.02

Signature: SELL PURGED DAY SLUBLE TIME: 1510

RRM, Inc.



Well Development Form

•	General Info	rmation	3 we	ll Constru	ection Inf	ormation	Well D)evelopment	Summary	
	7+05 W	/ell ID: խա-չ	Well	Diameter:	2"					
	Project #:	1A2201		Material:		(0 P	Estimated Purge: 25.1 Actual Purge:			
Site Add	iress:			Total Dep		<u> </u>	Well Type:			
City:				Interval:				 	Vell·	
County			Filter	Pack Inter	rval:		Groundwater Monitoring Well: Groundwater Extraction Well:			
Field Te	chnician:	· · · · · · · · · · · · · · · · · · ·	Filter	Pack Mate	erial:	:	Sparge/Dual Purpose Well:			
Well Development Method										
	Submersit	le Pump	Bailer_	Sur	ge Block	/ Swab	Other			
-				Vell Deve	lopment	Data		, , , , , , , , , , , , , , , , , , ,		
TIME		PTH	GAL	LONS			TEASUREM	ENTS		
Start	To Water	To Bottom	Pumped	Total	pН	Conductivi	ty Temp	Turbidity	Notes	
la7	5,19TOC 5,60 TOS	19.20				()				
1446			25	2 🤝	6.80	786	67.6	HERVY	Brown Pic.	
1457			2 <	5.0	685	836	71.0			
(50cl			2.5	75	7.02	877	75.9		• •	
			2.5	10.0						
			2.5	12.5						
			2	15.0						
			2.5	•	, ,				- i - i - i - i - i - i - i - i - i - i	
			25	75. 4						
				en en en en		*	-			
			·				*			
Signatur	e:			 1 .			<u> </u>	. · · · · · · · · · · · · · · · · · · ·	RRM. Inc.	

RRM, Inc.

WELL P	POED	Day.
ZIOIZ		k-in



Well Development Form

General Information

Well Construction Information

Well Development Summary

Date: 03-01-03 Well ID: MW-4	Well Diameter: 2"	Estimated Purge: 25.7
Station / Project #: = A 220	Well Material: Sch 40 PVC	Actual Purge: 30.0
Site Address: 649 Pacific	Well Total Depth: 20.0'	Well Type:
City: Alameda	Screen Interval: 20-5'	Groundwater Monitoring Well:
County / State: Alancela /CA	Filter Pack Interval: 20-45	Groundwater Extraction Well:
Field Technician:	Filter Pack Material: #3	Sparge/Dual Purpose Well:

Well Development Method

Submersible Pump	Bailer	Surge Block / Swab Other Trush punp w dedicated

Well Development Data

TIME	DEI	TH		LONS			ASUREM	ENTS	
Start	To Water	To Bottom	Pumped	Total	pН	Conductivity	Temp 2	Turbidity	Notes
०१५५	4.86 FOC	18.73	0	0		(~)(c)	4)	J -	
(105			25	2.5	7.28	818	74.9	HEAVY	Brown COLORY THICK
1107			2.5	5	7.44	633	72.2	٠,	٠.,
liog		Surge	2.5	7.5	7.39	592	71.9	٦.	41
1121		wellows	2.5	10.0	7.09	608	70.7		-3
1127	,		2.5	12.5	7.11	554	ने देव	/ (
(130			2.5	15.0	7.04	505	69.6	(i	
113(2.4	17.5	7.0	493	69.9	10	ć
زارعد(dry dry	2.7	20.0	6.97	506	69.G	()	216-17T Brawn
11,26	, , , , , , , , , , , , , , , , , , ,	<i>U</i> ,	2.5	22.5	6.94	439	70.1		Brown
1140			2.5	25.0	ଓ ସ୍ୱ (474	69.3	"	11

Signature

RRM, Inc.

GALLOWS

FINE PUREN TOTAL PH COND. TEMP TURBIDITY MORES

UM2 27 27.5 6.83 479 69.0 HARVY BROWN

UM72 2.5 30.0 6.79 457 68.1 1. CHOUNT

. . .

É



Well Development Form

General Information

Well Construction Information

Well Development Summary

Date: 34-05 Well ID: MW-5	Well Diameter: 2"	Estimated Purge: 25.9
Station / Project #: TA220	Well Material: Set 40 PVC	Actual Purge: 25.0
Site Address: 649 PACIFIC LUE.	Well Total Depth: 20	Well Type:
City: ALAMEDA	Screen Interval: 20-5'	Groundwater Monitoring Well:
County / State: ALMED / Ch	Filter Pack Interval: 20-4.5	Groundwater Extraction Well:
Field Technician: $c_{\tau}/s\lambda$	Filter Pack Material: 🔟 3	Sparge/Dual Purpose Well:

Well Development Method

Submersible Pump Bailer Surge Block / Swab Y Other GHS TRACH Pump CHECK VAL

Well Development Data TIME DEPTH **GALLONS** MEASUREMENTS Start To Water To Bottom Pumped Total pΗ Conductivity/ **Turbidity** Temp Notes 4.76 TOC 17.04 1014 5.06 TOS 1525 DI<. 7.38 HEN 529 62.9 2.5 BROWN 2.5 1526 1, 7.48 495 5.0 64.2 1530 7.67 2.5 65.9 7-5 530 1531 ADD 1 . 457 7.64 64.7 2.5 1533 64.0 2.55 426 7.62 1215 2.5 1537 7.58 120 424 63,1 **Lት.** 🏝 & MOD 1540 2.5 17.5 7.61 365 62.8 HEAU Brown 1544 358 2.5 20.0 7.51 64.5 QoM1547 4 (7.46 63.8 22.5 1550 13 64, 1 1 7.41 25.0 336

Signature:

RRM, Inc.

SAMPLE TIME: 1557



Mid Coast Engineers

Civil Engineers and Land Surveyors

70 Penny Lane, Suite A - Watsonville, CA 95076 phone: (831) 724-2580 fax: (831) 724-8025 e-mail: lee@midcoastengineers.com

Richard A. Wadsworth
Civil Engineer

Stanley O. Nielsen
Land Surveyor
Lee D. Vaage
Land Surveyor

Jeff S. Nielsen
Land Surveyor

March 2, 2005

Ken Peck RRM 3912 Portola Drive, Suite 8 Santa Cruz, CA 95062

Re: 649 Pacific Avenue, Alameda, California; RRM Project IA220, MCE Job No. 05039

Dear Mr. Peck,

As you requested, on March 1 we surveyed five monitoring wells located at the referenced site. Our findings are listed on the attached sheets, expressed in State Plane Coordinates and Latitude/Longitude.

A notch was cut in the north rim of the PVC casing (TOC) and a cross chiseled in the north rim of the box (TOB).

Measurements were obtained from conventional survey techniques in combination with GPS techniques (Code CGPS), using control points HT0654 (PORT 1) and HT0882 (941 4750 TIDAL 7), as published by NGS/NOAA and listed on their web site. Latitude and Longitude as shown were determined from the California Coordinate System, Zone 3, NAD 83 Datum. The accuracy range of the reported information is +/- 1cm. GPS equipment is the Trimble 5700 and 5800 systems (Code T57/T58).

The benchmark for this survey is HT0882, as referenced above, a bench mark disk in the top of a concrete bulkhead at the northeast corner of a lagoon, 100 feet southwest of and across Ferry Point from the southwest corner of Building 66. Elevation = 6.42 feet NGVD 29.

Please let me know if you have questions or need additional information.

Yours truly,

Lee D. Vaage



649 PACIFIC AVENUE Alameda, California

RRM Project IA220

Project: 05039

User name MCE

Date & Time 9:51:42 AM 3/2/2005

Coordinate System US State Plane 1983

Zone California Zone 3 0403

Project Datum NAD 1983 (Conus)

Vertical Datum NGVD29

Coordinate Units US survey feet
Distance Units US survey feet
Elevation Units US survey feet

Point Number	Northing	Easting	Elevation	Description
16	2110090.74	6048025.59	14.68	MW-1toc
17	2110090.92	6048025.46	15.18	MW-1tob
14	2110064.91	6048043.51	14.84	MW-2toc
15	2110065.11	6048043.38	15.21	MW-2tob
7	2110137.71	6048011.82	14.79	MW-3toc
8	2110137.84	6048011.72	15.11	MW-3tob
9	2110093.25	6047988.48	14.52	MW-4toc
10	2110093.35	6047988.39	15.02	MW-4tob
11	2110030.75	6047993.71	14.54	MW-5toc
12	2110030.88	6047993.62	14.79	MW-5tob
1002	2111474.31	6042016.14	6.42	GPS 0882

649 PACIFIC AVENUE Alameda, California

RRM Project IA220

Project: 05039

User name MCE Date & Time 9:51:42 AM 3/2/2005

Coordinate System US State Plane 1983 Zone California Zone 3 0403

Project Datum NAD 1983 (Conus)

Vertical Datum NGVD29

Coordinate Units US survey feet
Distance Units US survey feet
Elevation Units US survey feet

Point Number	Latitude	Longitude	Elevation	Description
16	37.776527688°N	122.277316420°W	14.68	MVV-1toc
17	37.776528161°N	122.277316900°W	15.18	MW-1tob
14	37.776457707°N	122.277252749°W	14.84	MW-2toc
15	37.776458242°N	122.277253215°W	15.21	MW-2tob
7	37.776655943°N	122.277367152°W	14.79	MW-3toc
8	37.776656287°N	122.277367519°W	15.11	MW-3tob
9	37.776532638°N	122.277444969°W	14.52	MW-4toc
10	37.776532918°N	122.277445296°W	15.02	MW-4tob
11	37.776361307°N	122.277422787°W	14.54	MW-5toc
12	37.776361659°N	122.277423110°W	14.79	MW-5tob
1002	37.780011485°N	122.298197403°W	6.42	GPS 0882

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9		te System		State Plane	1983 Zone	California Zone	0403			<u> </u>		
10	Vertical D		SVD2	83 (Conus)								
11									-	·		
12	Distance	te Units										
13		Units US		ey feet								ļ <u></u>
14	Clevauori	Units O	Surv	rey leet		·	 ,					
15		/W-1	MW	03/01/2005	37.7765277	100 0770164	CCDS	NADOS	4 B	lid Cooot Engineers	Tea	4
16			MVV	03/01/2005		122.2773104	CCDS	NADOS	1 17	lid Coast Engineers lid Coast Engineers	T57	top of casin
17			MW	03/01/2005		122.2772672	CCDS	NAD03	1 IV	iid Coast Engineers	T57	top of casin
18			MW	03/01/2005		122.2713012	CCRS	NADOS	1 IV	lid Coast Engineers lid Coast Engineers	T57	top of casin
19	1	/W-5	MVV	03/01/2005	<u> </u>						T57	top of casin
10	11/	71 44 -0	MANA	03/01/2003	37.7703013	-122.2774228	CGPS	NAD83		lid Coast Engineers	T57	top of casin

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8	Coordinate	System	US State PI	ane 1983	Z	one	Ca	lifornia Zor	ne 3 0403		
9	Project Datu	ım NA	D 1983 (Cont	ıs)							
10	Vertical Dat	um NO	SVD29	,							
11	Coordinate	Units l	JS survey fee	t	· · · · · · · · · · · · · · · · · · ·			· · · · · · · · · · · · · · · · · · ·			
12	Distance Ur	nits US	survey feet								
13	Elevation U	nits US	survey feet								
14							-				
15	MV	<i>l</i> -1	03/01/2005	14.68	CGPS	29	0.5		Mid Coast Engineers		top of casing
16	ΜV	<i>l</i> -2	03/01/2005	14.84	CGPS	29	0.5		Mid Coast Engineers		top of casing
17	MV	/-3	03/01/2005	14.79	CGPS	29	0.5	· · · · · ·	Mid Coast Engineers		top of casing
18	MV	<i>i</i> -4	03/01/2005	14.52	CGPS	29	0.5		Mid Coast Engineers		top of casing
19	MV	/-5	03/01/2005	14.54	CGPS	29	0.5		Mid Coast Engineers		top of casing

••

ATTACHMENT D CERTIFIED ANALYTICAL REPORTS AND CHAIN-OF-CUSTODY DOCUMENTATION

3334 Victor Court • Santa Clara, CA 95054 • (408) 588-0200 • Fax (408) 588-0201

Matt Paulus

Remediation Risk Management-SC 2560 Soquel Ave., Suite 8 Santa Cruz, CA 95062

Order Number: 42049

Project Number: IA220

FEB-0.7-2005

Certificate ID: 42049 - 1/28/2005 12:10:27 PM

Date Received: 1/18/2005 2:26:36 PM

P.O. Number: IA220

Certificate of Analysis - Final Report

On January 18, 2005, sample was received under chain of custody for analysis. Entech analyzes samples "as received" unless otherwise noted. The following results are included:

<u>Matrix</u>

Test

Method

Comments

Solid

Gas/BTEX

EPA 8015 MOD. (Purgeable)

EPA 8020

Lead

EPA 6010B

TPH-Extractable

repel For:

EPA 8015 MOD. (Extractable)

Entech Analytical Labs, Inc. is certified for environmental analyses by the State of California (#2346). If you have any questions regarding this report, please call us at 408-588-0200 ext. 225.

Sincerely,

Laurie Glantz-Murphy Laboratory Director

3334 Victor Court, Santa Clara, CA 95054

Phone: (408) 588-0200

Fax: (408) 588-0201

Remediation Risk Management-SC

2560 Soquel Ave., Suite 8 Santa Cruz, CA 95062 Attn: Matt Paulus Project Number: IA220

Date Received: 1/18/2005 P.O. Number: IA220 Sample Collected by: Client

Certificate of Analysis - Data Report

Sample ID: Drum-CP Matrix: Solid Sample Date: 1/18/2005 11:10 AM

Method: EPA 6010B - ICP-AES

Lab#: 42049-001

Prep Method: EPA 3050B - Acid Digestion for ICP

Parameter	Result	Flag	DF	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Lead	31		1	5	mg/Kg	01/20/2005	SM050120	01/24/2005	SICP2050124-2

Analyzed by: MFelix Reviewed by: DQUEJA

Reviewed by: LGLANTZ

Method: EPA 8015 MOD. (Extractable)

Prep Method: EPA 3545 - Pressurized Fluid Extraction, MeCl

97.2

Parameter	Result	Flag DF	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Mineral Spirits (Stod	dard) 80	2	5	mg/Kg	01/18/2005	DS4486A	01/20/2005	DS4486A
Note: (C10-C14)	•	ě						
Surrogate	Surrogate Recovery	Control Lim	its (%)				Analyzed by: Ibsian	σ

o-Terphenyl

Parameter	Result	Flag	DF	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Gasoline	18		1	2.5	mg/Kg	01/19/2005	SGC4050119	01/19/2005	SGC4050119
Note: Reported TPH as G	asoline value is	the result	of heavy	hydrocarbons within	the TPH	as Gasoline qua	ntitation range.		

Note: Reported 1711 as Gasoline value is the result of neavy hydrocarbons within the 1711 as Gasoline quantitation ran

41 - 137

 Surrogate
 Surrogate Recovery
 Control Limits (%)
 Analyzed by: mruan

 4-Bromofluorobenzene
 104
 65
 - 135
 Reviewed by: MTU

Method: EPA 8020 - Aromatic Organics Using GC/PID

	Q								
Parameter	Result	Flag	DF	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	ND		1	0.025	mg/Kg	01/19/2005	SGC4050119	01/19/2005	SGC4050119
Toluene	ND		1	0.025	mg/Kg	01/19/2005	SGC4050119	01/19/2005	SGC4050119
Ethyl Benzene	ND		1	0.025	mg/Kg	01/19/2005	SGC4050119	01/19/2005	SGC4050119
Xylenes, Total	ND		1	0.05	mg/Kg	01/19/2005	SGC4050119	01/19/2005	SGC4050119
Surrogate	Surrogate Recovery	Co	ntrol Li	mits (%)				Analyzed by: mruar	n
4-Bromofluorobenzene	101		65 -	135				Reviewed by: MTU	J

3334 Victor Court, Santa Clara, CA 95054

Phone: (408) 588-0200 Fax: (408) 588-0201

Quality Control - Method Blank

Solid

Prep Batch ID: DS4486A

TPH as Mineral Spirits (Stoddard)

Validated by: LGLANTZ - 01/21/05

QC Batch ID: DS4486A

Prep Date: 1/18/2005

Analysis Date: 1/20/2005

Method Blank

Method: EPA 8015 MOD. (Extractable)

Parameter

o-Terphenyl

Result ND

DF

PQLR 2.5

Units mg/Kg

Surrogate for Blank

% Recovery Control Limits

89.5 41 - 137

3334 Victor Court , Santa Clara, CA 95054

Phone: (408) 588-0200 Fax: (408) 588-0201

Quality Control - Laboratory Control Spike / Duplicate Results Solid

Prep Batch ID: DS4486A

Reviewed by: LGLANTZ - 01/21/05

QC Batch ID: DS4486A

Prep Date: 1/18/2005 Analysis Date: 1/20/2005

LCS Method:	EPA 8015 M	OD. (Extr	actable)				C	Conc. Units:	mg/Kg
Parameter	Blank (MDL)	Spike Amt	SpikeResult	QC Type	Analysis Date	% Recovery	RPD	RPD Limits	Recovery Limits
TPH as Diesel	< 0.7	50.0	43	LCS	1/20/2005	86.0			44 - 108
TPH as Motor Oil	<3	50.0	31	LCS	1/20/2005	61.4			32 - 130
Surrogate	% Recovery	Control Lin	nits		· · · · · · · · · · · · · · · · · · ·				
o-Terphenyl	93.5	41 - 137							
LCSD Method:	EPA 8015 M	OD. (Extr	actable)				C	one. Units:	mg/Kg
Parameter	Blank (MDL)	Spike Amt	SpikeResult	QC Type	Analysis Date	% Recovery	RPD	RPD Limits	Recovery Limits
TPH as Diesel	<0.7	50.0	48	LCSD	1/20/2005	96.0	11	30.0	44 - 108
TPH as Motor Oil	<3	50.0	34	LCSD	1/20/2005	67.2	9.0	30.0	32 - 130
Surrogate	% Recovery	Control Lin	ıits						. <u>.</u> .
o-Terphenyl	105	41 - 137	•						

3334 Victor Court, Santa Clara, CA 95054

Phone: (408) 588-0200

Fax: (408) 588-0201

Quality Control - Method Blank

Solid

Prep Batch ID: SGC4050119

Validated by: MTU - 01/24/05

QC Batch ID: SGC4050119

Prep Date: 1/19/2005

Analysis Date: 1/19/2005

Method: EPA 8015 MOD. (Purgeable)

Parameter TPH as Gasoline

Method Blank

Result ND

DF 1

PQLR 2.5

Units mg/Kg

Surrogate for Blank 4-Bromofluorobenzene % Recovery Control Limits 96.0

65 - 135

3334 Victor Court , Santa Clara, CA 95054

Phone: (408) 588-0200

Fax: (408) 588-0201

Quality Control - Method Blank

Solid

Prep Batch ID: SGC4050119

Validated by: MTU - 01/24/05

QC Batch ID: SGC4050119

Prep Date: 1/19/2005

Analysis Date: 1/19/2005

Method Blank	Method: EPA 8	3020				
Parameter		Result	ÐF	PQLR	Units	
Benzene		ND	1	0.025	mg/Kg	
Ethyl Benzene		ND	1	0.025	mg/Kg	
Toluene		ND	1	0.025	mg/Kg	
Xylenes, Total		ND	1	0.05	mg/Kg	
Surrogate for Blank	% Recovery Control Li	mits				
4-Bromofluorobenzene	98.7 65 - 1	35				

3334 Victor Court, Santa Clara, CA 95054

Phone: (408) 588-0200 Fax: (408) 588-0201

Quality Control - Laboratory Control Spike / Duplicate Results Solid

Prep Batch ID: SGC4050119

Reviewed by: MTU - 01/24/05

QC Batch ID: SGC4050119

Prep Date: 1/19/2005

Analysis Date: 1/19/2005

	EPA 8015 M							onc. Units:	
Parameter		-	=		Analysis Date	•	RPD	RPD Limits	Recovery Limits
TPH as Gasoline	<3	12.5	14	LCS	1/19/2005	113			65 - 135
Surrogate	% Recovery	Control Lin	nits						
4-Bromofluorobenzene	105	65 - 135	5						
LCSD Method:	EPA 8015 M	IOD. (Purg	geable)				c	onc. Units:	mg/Kg
Parameter	Blank (MDL)	Spike Amt	SpikeResult	QC Type	Analysis Date	% Recovery	RPD	RPD Limits	Recovery Limits
ГРН as Gasoline	<3	12.5	14	LCSD	1/19/2005	. 112	0.71	30.0	65 - 135
Surrogate	% Recovery	Control Lin	nits						
4-Bromofluorobenzene	101	65 - 135	5						
LCS Method:	EPA 8020						C	one. Units:	mg/Kg
Parameter	Blank (MDL)	Spike Amt	SpikeResult	OC Type	Analysis Date	% Recovery	RPD	RPD Limits	Recovery Limits
Benzene	<0.03	0.4	0.41	LCS	1/19/2005	104			54 - 146
Ethyl Benzene	< 0.03	0,4	0.39	LCS	1/19/2005	96.3			67 - 134
Гојиене	< 0.03	0.4	0.41	LCS	1/19/2005	102			45 - 157
Xylenes, total	< 0.05	0.8	1.1	LCS	1/19/2005	138***			79 - 126
Surrogate	% Recovery	Control Lin	nits						
4-Bromofluorobenzene	98.6	65 - 135	5						
LCSD Method:	EPA 8020						C	onc. Units:	mg/Kg
Parameter	Blank (MDL)	Spike Amt	SpikeResult	QC Type	Analysis Date	% Recovery	RPD	RPD Limits	Recovery Limits
Benzene	< 0.03	0.4	0.42	LCSD	1/19/2005	105	1.7	30.0	54 - 146
Ethyl Benzene	< 0.03	0.4	0.39	LCSD	1/19/2005	98.5	2.3	30.0	67 - 134
l'oluene	< 0.03	0.4	0.40	LCSD	1/19/2005	100	2.0	30.0	45 - 157
Xylenes, total	<0.05	0.8	1.2	LCSD	1/19/2005	149.625***	8.1	30.0	79 - 126
Surrogate	% Recovery	Control Lin	nits						
4-Bromofluorobenzene	96.8	65 - 135	5						

3334 Victor Court Santa Clara, CA 95054

(408) 588-0200 (408) 588-0201 - Fax

Chain of Custody / Analysis Request

Santa Clara, CA 95	1004 (406	o) 500-UZU1 -	· rax																			
Attention to:		Phone No.:	٠ يم ســ		Purchase	Order No	D.:				Invoid	e to:	(If Dif	ferent)					Phon	e:	·
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MATT PAULYS Company Name: RPM, TVC. Mailing Address: 1560 SOGYEV.		831-47	5-8249	-	Project N	o.: -771	2				Comp	any:								Quot	e No.:	
Mailing Address:		Email Address:			Project Na						Billing	Addr	ess: (lf Diffe	erent)							
2560 SOGUEL	AU 5T-8	mpanluse	Zip Code:																			
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June 2004		· · · · · · · · · · · · · · · · · · ·	•		<u> </u>																	

3334 Victor Court • Santa Clara, CA 95054 • (408) 588-0200 • Fax (408) 588-0201

Matt Paulus

Certificate ID: 42050 - 1/28/2005 12:12:48 PM

Remediation Risk Management-SC 2560 Soquel Ave., Suite 8 Santa Cruz, CA 95062

Order Number: 42050

Date Received: 1/18/2005 2:30:13 PM

P.O. Number: IA220

Project Number: IA220

Certificate of Analysis - Final Report

On January 18, 2005, samples were received under chain of custody for analysis. Entech analyzes samples "as received" unless otherwise noted. The following results are included:

Matrix

<u>Test</u>

Method

Comments

Solid

BTEX

EPA 8020

TPH-Extractable

m Helpel For:

EPA 8015 MOD. (Extractable)

Entech Analytical Labs, Inc. is certified for environmental analyses by the State of California (#2346). If you have any questions regarding this report, please call us at 408-588-0200 ext. 225.

Sincerely,

Laurie Glantz-Murphy Laboratory Director

3334 Victor Court, Santa Clara, CA 95054

Phone: (408) 588-0200

Fax: (408) 588-0201

Remediation Risk Management-SC

2560 Soquel Ave., Suite 8 Santa Cruz, CA 95062 Attn: Matt Paulus

Project Number: IA220

Date Received: 1/18/2005 P.O. Number: IA220 Sample Collected by: Client

Certificate of Analysis - Data Report

Lab#: 42050-001 Sample ID: MW-1-5'

Matrix: Solid

Sample Date: 1/17/2005 10:40 AM

Method: EPA 8015 MOD. (Extractable)

Prep Method: EPA 3545 - Pressurized Fluid Extraction, MeCl

Parameter		Result	Flag	DF	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Mineral Spi	rits (Stoddard)	ND		1	2.5	mg/Kg	01/18/2005	DS4486A	01/20/2005	D\$4486A
Surrogate	Surroga	te Recovery	Co	ntrol Li	mits (%)				Analyzed by: Jhsian	g
o-Terphenyl	•	59.9		41 -	137				Reviewed by: LGLA	INTZ

Method: EPA 8020 - Aromatic Organics Using GC/PID

Parameter	Result	Flag	DF	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	ND		1	0.025	mg/Kg	01/19/2005	SGC4050119	01/19/2005	SGC4050119
Toluene	ND		1	0.025	mg/Kg	01/19/2005	SGC4050119	01/19/2005	SGC4050119
Ethyl Benzene	ND		1	0.025	mg/Kg	01/19/2005	SGC4050119	01/19/2005	SGC4050119
Xylenes, Total	ND		1	0.05	mg/Kg	01/19/2005	SGC4050119	01/19/2005	SGC4050119
Surrogate	Surrogate Recovery	Cont	trol Li	nits (%)				Analyzed by: mruar	1

65 - 135 4-Bromofluorobenzene

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Remediation Risk Management-SC

2560 Soquel Ave., Suite 8 Santa Cruz, CA 95062 Attn: Matt Paulus

Project Number: IA220

Date Received: 1/18/2005 P.O. Number: IA220 Sample Collected by: Client

Certificate of Analysis - Data Report

Lab#: 42050-002 Sample ID: MW-1-10' Matrix: Solid Sample Date: 1/17/2005 10:48 AM

Method: EPA 8015 MOD. (Extractable)

Parameter	Result	Flag	DF	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Mineral Spirits (Stodd Note: (C10-C14)	ard) 380		5	13	mg/Kg	01/18/2005	D\$4486A	01/21/2005	DS4486A
Surrogate S	urrogate Recovery	Cor	ntrol Li	mits (%)				Analyzed by: Jhsian	g
o-Terphenyl	91.9		41 -	137				Reviewed by: LGLA	NTZ

Parameter	Result	Flag	DF	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	ND		1	0.025	mg/Kg	01/19/2005	SGC4050119	01/19/2005	SGC4050119
Toluene	ND		1	0.025	mg/Kg	01/19/2005	SGC4050119	01/19/2005	SGC4050119
Ethyl Benzene	ND		1	0.025	mg/Kg	01/19/2005	SGC4050119	01/19/2005	SGC4050119
Xylenes, Total	ND		1	0.05	mg/Kg	01/19/2005	SGC4050119	01/19/2005	SGC4050119
Surrogate	Surrogate Recovery	Co	ntrol Li	mits (%)				Analyzed by: mruar	1
4-Bromofluorobenzene	112		65 -	135				Reviewed by: MTU	r

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Project Number: IA220

Date Received: 1/18/2005 P.O. Number: IA220

Sample Collected by: Client

Certificate of Analysis - Data Report

Lab#: 42050-004 Sample ID: MW-1-20' Matrix: Solid Sample Date: 1/17/2005 11:55 AM

Method: EPA 8015 MOD. (Extractable)

Parameter	Result	Flag	DF	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Mineral Spirits (Sto	ddard) 7.0		1	2.5	mg/Kg	01/18/2005	DS4486A	01/20/2005	DS4486A
Note: Discrete per	ks and atypical pattern.		<u> </u>		<u></u>				
n ,	Surrogate Recovery	C	ontrol Li	mite (%)				Analyzed by: Jhsiang	
Surrogate	Surrogate Recovery		ond of Li	uires (>e)				, ,	

Method: EPA 8020 - Aromatic Organics Using GC/PID

Parameter	Result	Flag	DF	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	ND		1	0.025	mg/Kg	01/19/2005	SGC4050119	01/19/2005	SGC4050119
Toluene	ND		1	0.025	mg/Kg	01/19/2005	SGC4050119	01/19/2005	SGC4050119
Ethyl Benzene	ND		1	0.025	mg/Kg	01/19/2005	SGC4050119	01/19/2005	SGC4050119
Xylenes, Total	ND		1	0.05	mg/Kg	01/19/2005	SGC4050119	01/19/2005	SGC4050119

Analyzed by: mruan Surrogate Surrogate Recovery Control Limits (%) 4-Bromofluorobenzene 99.7 65 - 135 Reviewed by: MTU

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Project Number: IA220

Date Received: 1/18/2005 P.O. Number: IA220

Sample Collected by: Client

Certificate of Analysis - Data Report

Lab #: 42050-005

Sample ID: MW-2-5'

Matrix: Solid

Sample Date: 1/17/2005

1:00 PM

Method: EPA 8015 MOD. (Extractable)

Prep Method: EPA 3545 - Pressurized Fluid Extraction, McCl

Parameter		Result	Flag	ÐF	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Mineral Spirits	s (Stoddard)	ND		1	2.5	mg/Kg	01/18/2005	D\$4486A	01/20/2005	DS4486A
Surrogate	Surrogat	te Recovery	Co	ntrol Li	mits (%)				Analyzed by: Jhsian	g
o-Terphenyl	8	34.5		41 -	137				Reviewed by: LGLA	NTZ

Method: EPA 8020 - Aromatic Organics Using GC/PID

Parameter	Result	Flag	DF	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
				•					
Benzene	ND		1	0.025	mg/Kg	01/19/2005	SGC4050119	01/19/2005	SGC4050119
Toluene	ND		1	0.025	mg/Kg	01/19/2005	SGC4050119	01/19/2005	SGC4050119
Ethyl Benzene	ND		1	0.025	mg/Kg	01/19/2005	SGC4050119	01/19/2005	SGC4050119
Xylenes, Total	ND		1	0.05	mg/Kg	01/19/2005	SGC4050119	01/19/2005	SGC4050119

Surrogate Surrogate Recovery Control Limits (%) 4-Bromofluorobenzene 102 65 - 135

Analyzed by: mruan Reviewed by: MTU

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Project Number: IA220

Date Received: 1/18/2005 P.O. Number: IA220 Sample Collected by: Client

Certificate of Analysis - Data Report

Lab #: 42050-008 Sample ID: MW-2-20' Matrix: Solid

Sample Date: 1/17/2005 1:26 PM

Method: EPA 8015 MOD. (Extractable)

Prep Method: EPA	. 3545 - Pressuri:	zed Fluid Ext	traction,	MeCl						
Parameter		Result	Flag	DF	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Mineral Spirits (Stoddard)		ND		1 2		2.5 mg/Kg	01/21/2005	DS4487A	01/21/2005	DS4487A
Surrogate	Surroga	te Recovery	Co	ntrol Li	mits (%)				Analyzed by: Jhsian	5
o-Ternhenvl	4	95.7		41 -	137				Reviewed by: LGLA	NTZ

Method: EPA 8020 - Aromatic Organics Using GC/PID

Parameter	Result	Flag	DF	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	ND		1	0.025	mg/Kg	01/19/2005	SGC4050119	01/19/2005	SGC4050119
Toluene	ND		1	0.025	mg/Kg	01/19/2005	SGC4050119	01/19/2005	SGC4050119
Ethyl Benzene	ND		1	0.025	mg/Kg	01/19/2005	SGC4050119	01/19/2005	SGC4050119
Xylenes, Total	ND		1	0.05	mg/Kg	01/19/2005	SGC4050119	01/19/2005	SGC4050119
<u> </u>	S							Analyzed by: moua	n

Surrogate 4-Bromofluorobenzene	Surrogate Recovery 95.3	Control Limi 65 - 1	ts (%) 35				Analyzed by: mruar Reviewed by: MTU	
Xylenes, Total	ND	1	0.05	mg/Kg	01/19/2005	SGC4050119	01/19/2005	S
Ethyl Benzene	ND	1	0.025	mg/Kg	01/19/2005	SGC4050119	01/19/2005	S

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Project Number: IA220

Date Received: 1/18/2005 P.O. Number: IA220 Sample Collected by: Client

Certificate of Analysis - Data Report

Lab #: 42050-009 Sample ID: MW-3-5' Matrix: Solid

Sample Date: 1/18/2005

8:10 AM

Method: EPA 8015 MOD. (Extractable)

Parameter		Result	Flag	DF	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Mineral Spirits (Sto	ddard)	ND		1	2.5	mg/Kg	01/18/2005	DS4486A	01/20/2005	DS4486A
Surrogate	Surrogat	e Recovery	Cor	atrol Li	mits (%)				Analyzed by: Jhsian	g
o-Terphenyl	6	8.5		41 -	137				Reviewed by: LGLA	NTZ

Method: EPA 8020 - Aromatic Organics Using GC/PID

Parameter	Result	Flag	DF	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	ND		1	0.025	mg/Kg	01/19/2005	SGC4050119	01/20/2005	SGC4050119
Toluene	ND		1	0.025	mg/Kg	01/19/2005	SGC4050119	01/20/2005	SGC4050119
Ethyl Benzene	ND		1	0.025	mg/Kg	01/19/2005	SGC4050119	01/20/2005	SGC4050119
Xylenes, Total	ND		1	0.05	mg/Kg	01/19/2005	SGC4050119	01/20/2005	SGC4050119
				*4 (84)				Analyzed by: mrus	n

Xylenes, Total	ND	1	0.05	mg/Kg	01/19/2005	SGC4050119	01/20/2005	
Surrogate	Surrogate Recovery	Control Limit	s (%)				Analyzed by: mruar	
4-Bromofluorobenzene	102	. 65 - 13	35				Reviewed by: MTU	J

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Remediation Risk Management-SC

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Date Received: 1/18/2005 P.O. Number: IA220

Sample Collected by: Client

Certificate of Analysis - Data Report

Lab #: 42050-012 Sample ID: MW-3-20'

Matrix: Solid

Sample Date: 1/18/2005

8:45 AM

Method: EPA 8015 MOD. (Extractable)

Prep Method: EPA 3545 - Pressurized Fluid Extraction, MeCl

Lich Memon: ELV 2	343 - I 1698HIL	CCU FIGIU EA	u acnon, i	VICCI						
Parameter		Result	Flag	DF	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Mineral Spirits	(Stoddard)	ND		1	2.5	mg/Kg	01/18/2005	D\$4486A	01/20/2005	DS4486A
Surrogate	Surroga	te Recovery	Cor	trol Li	mits (%)				Analyzed by: Jhsian	g
o-Terphenyl	1	32.7	4	1 1 -	137				Reviewed by: LGLA	ANTZ

Method: EPA 8020 - Aromatic Organics Using GC/PID

Parameter	Result F	lag DF	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	ND	1	0.025	mg/Kg	01/19/2005	SGC4050119	01/20/2005	\$GC4050119
Toluene	· ND	1	0.025	mg/Kg	01/19/2005	SGC4050119	01/20/2005	SGC4050119
Ethyl Benzene	ND	1	0.025	mg/Kg	01/19/2005	SGC4050119	01/20/2005	SGC4050119
Xylenes, Total	ND	1	0.05	mg/Kg	01/19/2005	SGC4050119	01/20/2005	SGC4050119

Surrogate Surrogate Recovery Control Limits (%)
4-Bromofluorobenzene 102 65 - 135

Analyzed by: mruan

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Remediation Risk Management-SC

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Project Number: IA220

Date Received: 1/18/2005 P.O. Number: IA220

Sample Collected by: Client

Certificate of Analysis - Data Report

Lab#: 42050-013 Sample ID: MW-4-5' Matrix: Solid

Sample Date: 1/18/2005

10:20 AM

Mathada	TO DO A	COLF BACOD	(Enturate his)
MACCION:	LIA	OATS MICH	(Extractable)

Pren Method: EPA 3545 - Pressurized Fluid Extraction, McCl

Tich premont rr	. 0040 - 11633011	eca i iaia Da	er according to	1001							
Parameter		Result	Flag	DF	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch	
TPH as Mineral Spir	,	ND		1	2.5	mg/Kg	01/18/2005	DS4486A	01/20/2005	DS4486A	
Surrogate		te Recovery			mits (%)				Analyzed by: Jhsian	g	
o-Terphenyl	4	15.0	4	1 -	137				Reviewed by: LGLA	NTZ	

Method: EDA 2020 - Arometic Organics Heine CC/DID

Parameter	Result	Flag	DF	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	ND		1	0.025	mg/Kg	01/19/2005	SGC4050119	01/20/2005	SGC4050119
Toluene	ND		1	0.025	mg/Kg	01/19/2005	SGC4050119	01/20/2005	SGC4050119
Ethyl Benzene	ND		1	0.025	mg/Kg	01/19/2005	SGC4050119	01/20/2005	SGC4050119
Xylenes, Total	ND		1	0.05	mg/Kg	01/19/2005	SGC4050119	01/20/2005	SGC4050119
Surrogate	Surrogate Recovery	Co	ntroł Li	mits (%)				Analyzed by: mruai	1

109 4-Bromofluorobenzene 65 - 135

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Remediation Risk Management-SC

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Date Received: 1/18/2005 P.O. Number: IA220

Sample Collected by: Client

Certificate of Analysis - Data Report

Lab #: 42050-016 Sample ID: MW-4-20'

Matrix: Solid

Sample Date: 1/18/2005

10:46 AM

Tel 45 .	23.25 4		/ -
Method:	LPA	OUID MICH.	(Extractable)

Prep Method: EPA 3545 - Pressurized Fluid Extraction, MeCl

Trebuzzenoan mr.		x L.x	,	******						
Parameter TPH as Mineral Spirits (Stoddard)		Result	Flag	DF	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
		ND	1		2.5	mg/Kg	01/18/2005	DS4486A	01/20/2005	DS4486A
Surrogate	Surroga	te Recovery	Co	ntrol Li	mits (%)				Analyzed by: Jhsian	g
o-Terphenyl		80.0		41 -	137				Reviewed by: LGLA	ANTZ

Method: EPA 8020 - Aromatic Organics Using GC/PID

Parameter	Result	Flag	DF	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	ND		1	0.025	mg/Kg	01/19/2005	SGC4050119	01/20/2005	SGC4050119
Toluene	ND		1	0.025	mg/Kg	01/19/2005	SGC4050119	01/20/2005	SGC4050119
Ethyl Benzene	ND		1	0.025	mg/Kg	01/19/2005	SGC4050119	01/20/2005	SGC4050119
Xylenes, Total	ND		1	0.05	mg/Kg	01/19/2005	SGC4050119	01/20/2005	SGC4050119

Surrogate Surrogate Recovery Control Limits (%)
4-Bromofluorobenzene 98.0 65 - 135

Analyzed by: mruan

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Remediation Risk Management-SC

2560 Soquel Ave., Suite 8 Santa Cruz, CA 95062 Attn: Matt Paulus Project Number: IA220

Date Received: 1/18/2005 P.O. Number: IA220 Sample Collected by: Client

Certificate of Analysis - Data Report

Lab #: 42050-017 Sample ID: MW-5-5' Matrix: Solid Sample Date: 1/17/2005 8:29 AM

Method: EPA 8015 MOD. (Extractable)

Prep Method: EPA 3545 - Pressurized Fluid Extraction, MeCl

Frep Method. ELA 3545	- 1 i casul i	zcu Fiatu Ex	il action, iv	ICCI						
Parameter		Result	Flag	DF	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Mineral Spirits (Sto	oddard)	ND		1	2.5	mg/Kg	01/18/2005	DS4486A	01/20/2005	DS4486A
Surrogate	Surroga	te Recovery	Cont	trol Li	mits (%)				Analyzed by: Jhsian	g
o-Temberyl		127	4	1 -	137				Reviewed by: LGLA	ANTZ

Method: EPA 8020 - Aromatic Organics Using GC/PID

Parameter	Result	Flag	DF	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	ND		1	0.025	mg/Kg	01/19/2005	SGC4050119	01/20/2005	SGC4050119
Toluene	ND		1	0.025	mg/Kg	01/19/2005	SGC4050119	01/20/2005	SGC4050119
Ethyl Benzene	ND		1	0.025	mg/Kg	01/19/2005	SGC4050119	01/20/2005	SGC4050119
Xylenes, Total	ND		1	0.05	mg/Kg	01/19/2005	SGC4050119	01/20/2005	SGC4050119

Surrogate Surrogate Recovery Control Limits (%)
4-Bromofluorobenzene 97.7 65 - 135
Reviewed by: MTU

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Remediation Risk Management-SC

2560 Soquel Ave., Suite 8 Santa Cruz, CA 95062 Attn: Matt Paulus

Project Number: IA220

Date Received: 1/18/2005 P.O. Number: IA220 Sample Collected by: Client

Certificate of Analysis - Data Report

Lab#: 42050-020

Sample ID: MW-5-20'

Matrix: Solid

Sample Date: 1/17/2005

9:00 AM

Method: EPA 8015 MOD. (Extractable)

Parameter		Result	Flag	DF	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Mineral Spirits (Stoddard)		ND		1	2.5	mg/Kg	01/18/2005	DS4486A	01/20/2005	D\$4486A
Surrogate	Surrogat	te Recovery	Co	ntrol Li	mits (%)				Analyzed by: Jhsian	g
o-Terphenyl 89		39.3		41 -	137				Reviewed by: LGLA	NTZ

Method: EPA 8020 - Aromatic Organics Using GC/PID

Parameter	Result	Result Flag Di		Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	ND		1	0.025	mg/Kg	01/19/2005	SGC4050119	01/20/2005	SGC4050119
Toluene	ND		1	0.025	mg/Kg	01/19/2005	SGC4050119	01/20/2005	SGC4050119
Ethyl Benzene	ND		1	0.025	mg/Kg	01/19/2005	SGC4050119	01/20/2005	SGC4050119
Xylenes, Total	ND		1	0.05	mg/Kg	01/19/2005	SGC4050119	01/20/2005	SGC4050119

Analyzed by: mruan Surrogate Surrogate Recovery Control Limits (%) 4-Bromofluorobenzene 100 65 - 135 Reviewed by: MTU

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Quality Control - Method Blank

Solid

Prep Batch ID: DS4486A

Validated by: LGLANTZ - 01/21/05

QC Batch ID: DS4486A

Prep Date: 1/18/2005

Analysis Date: 1/20/2005

Method Blank

Method: EPA 8015 MOD. (Extractable)

Parameter
TPH as Mineral Spirits (Stoddard)

Result ND DF

PQLR 2.5

Units mg/Kg

Surrogate for Blank

% Recovery Control Limits

o-Terphenyl

89.5

41 - 137

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Quality Control - Laboratory Control Spike / Duplicate Results Solid

Prep Batch ID: DS4486A

Prep Date: 1/18/2005

Reviewed by: LGLANTZ - 01/21/05

QC Batch ID: DS4486A

Analysis Date: 1/20/2005

LCS Method:	EPA 8015 M	OD. (Extra	actable)				C	onc. Units:	mg/Kg
Parameter	Blank (MDL)	Spike Amt	SpikeResult	QC Type	Analysis Date	% Recovery	RPD	RPD Limits	Recovery Limits
TPH as Diesel	< 0.7	50.0	43	LCS	1/20/2005	86.0			44 - 108
TPH as Motor Oil	<3	50.0	31	LCS	1/20/2005	61.4			32 - 130
Surrogate	% Recovery	Control Lin	nits		.	•			
o-Terphenyi	93.5	41 - 137	<i>.</i>						
LCSD Method:	EPA 8015 M	OD. (Extra	actable)				C	one. Units:	mg/Kg
Parameter	Blank (MDL)	Spike Amt	SpikeResult	QC Type	Analysis Date	% Recovery	RPD	RPD Limits	Recovery Limits
TPH as Diesel	<0.7	50.0	48	LCSD	1/20/2005	96.0	11	30.0	44 - 108
TPH as Motor Oil	<3	50.0	34	LCSD	1/20/2005	67.2	9.0	30.0	32 - 130
Surrogate	% Recovery	Control Lin	nits	_					

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Quality Control - Method Blank

Solid

Prep Batch ID: DS4487A

TPH as Mineral Spirits (Stoddard)

Validated by: LGLANTZ - 01/24/05

QC Batch ID: DS4487A

Prep Date: 1/21/2005

Analysis Date: 1/21/2005

Method Blank

Method: EPA 8015 MOD. (Extractable)

Parameter

Result

ND

DF

PQLR 2.5

Units mg/Kg

Surrogate for Blank

% Recovery Control Limits

o-Terphenyl

94.4 41 - 137

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Quality Control - Laboratory Control Spike / Duplicate Results Solid

Prep Batch ID: DS4487A

Reviewed by: LGLANTZ - 01/24/05

QC Batch ID: DS4487A

Prep Date: 1/21/2005

Analysis Date: 1/21/2005

LCS Method:	EPA 8015 M	OD. (Extr	actable)				Conc. Units: mg/Kg							
Parameter	Blank (MDL)	Spike Amt	SpikeResult	QC Type	Analysis Date	% Recovery	RPD	RPD Limits	Recovery Limits					
TPH as Diesel	<0.7	50.0	43	LCS	1/21/2005	85.8			44 - 108					
TPH as Motor Oil	<3	50.0	31	LCS	1/21/2005	61.0			32 - 130					
Surrogate	% Recovery	Control Lin	nits											
o-Terphenyl	99.6	41 - 137	1											
LCSD Method:	EPA 8015 M	OD. (Extr	actable)				c	onc. Units:	mg/Kg					
Parameter	Blank (MDL)	Spike Amt	SpikeResult	QC Type	Analysis Date	% Recovery	RPD	RPD Limits	Recovery Limits					
TPH as Diesel	<0.7	50.0	51	LCSD	1/21/2005	102	17	30.0	44 - 108					
TPH as Motor Oil	<3	50.0	32	LCSD	1/21/2005	64.6	5.7	30.0	32 - 130					
Surrogate	% Recovery	Control Lin	nits					.						

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Quality Control - Method Blank

Solid

Prep Batch ID: SGC4050119

Validated by: MTU - 01/24/05

QC Batch ID: SGC4050119

Prep Date: 1/19/2005

Analysis Date: 1/19/2005

Method Blank	Meth	od: EPA 8020					
Parameter			Result	DF	PQLR	Units	
Benzene			ND	1	0.025	mg/Kg	
Ethyl Benzene			ND	1	0.025	mg/Kg	
Toluene			ND	1	0.025	mg/Kg	
Xylenes, Total			ND	1	0.05	mg/Kg	
Surrogate for Blank	% Recovery	Control Limits					
4-Bromofluorobenzene	98.7	65 - 135					

3334 Victor Court, Santa Clara, CA 95054

Phone: (408) 588-0200 Fax: (408) 588-0201

Quality Control - Laboratory Control Spike / Duplicate Results Solid

Prep Batch ID: SGC4050119

Reviewed by: MTU - 01/24/05

QC Batch ID: SGC4050119

Prep Date: 1/19/2005

Analysis Date: 1/19/2005

LCS Method:	EPA 8020					4	C	onc. Units:	mg/Kg
Parameter	Blank (MDL)	Spike Amt	SpikeResult	QC Type	Analysis Date	% Recovery	RPD	RPD Limits	Recovery Limits
Benzene	< 0.03	0.4	0.41	LCS	1/19/2005	104			54 - 146
Ethyl Benzene	< 0.03	0.4	0.39	LCS	1/19/2005	96.3			67 - 134
Toluene	< 0.03	0.4	0.41	LCS	1/19/2005	102			45 - 157
Xylenes, total	<0.05	1.2	1.1	LCS	1/19/2005	92.0			79 - 126
Surrogate	% Recovery	Control Lin	nits						
4-Bromofluorobenzene	98.6	65 - 135	···						
LCSD Method:	EPA 8020						c	onc. Units:	mg/Kg
Parameter	Blank (MDL)	Spike Amt	SpikeResult	QC Type	Analysis Date	% Recovery	RPD	RPD Limits	Recovery Limits
Benzene	<0.03	0.4	0.42	LCSD	1/19/2005	105	1.7	30.0	54 - 146
Ethyl Benzene	< 0.03	0.4	0.39	LCSD	1/19/2005	98.5	2.3	30.0	67 - 134
Toluene	< 0.03	0.4	0.40	LCSD	1/19/2005	100	2.0	30.0	45 - 157
Xylenes, total	<0.05	1.2	1.2	LCSD	1/19/2005	99.8	8.1	30.0	79 - 126
Surrogate	% Recovery	Control Lin	nits				·		
4-Bromofluorobenzene	96.8	65 - 135	i						

3334 Victor Court Santa Clara, CA 95 Attention to: PAYLUS	Santa Clara, CA 95054 (408) 588-0201 - Fax tention to: WATT PAULUS Impany Name: Phone No.: S31 - 475-8141 Fax No.: S31 - 475-8249					Order	.,	of	f C		to(An	al	ys 		Phone:	equest	<u></u>
Company Name: RRM, FVC Mailing Address: 25(0) SVOU5(1)	4V, ST. 8	831-47 Email Address: MDanlys@	imsc-con	Pi	roject N TA roject N	22 ame:				Billir	ipany: ig Addre			nt)			1	Quote No.		
SANTA CRUZ		State:	Zip Code: 95062		roject L 949		IF X		G	C/MS M				C Met	hods		<u> </u>	State: Gener	Zip: ral Chemistry	
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June 2004

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Entech AI 3334 Victor Court Santa Clara, CA 95	(40	8) 588-0200	·		Ch	ain	of	C	ust	tod	y /	Α	na	ılys	sis	F	le(ques	t
Attention to: MATT PAULUS	·	Phone No.:	75-8141	Purcha	se Order	No.:			Invoi	ce to: (If	Differen	t)				Phone:			
Company Name:	·	Fax No.:	75-8249	Projec	t No.:	<u> </u>		·	Comp	oany:						Quote	No.:		
Mailing Address:	MICTO	Email Address:			t Name:	<u>/</u>			Billing	g Address	: (If Diff	erent)				l			
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Sampler: Field KEN Full Global ID:	Örg. Code:	□ Same Da □ 2 Day □ 4 Day	round Time ay □ 1 Day □ 3 Day □ 5 Day 10 Day			. /				1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		200 MS (00)				7			7
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June 2004	<u> </u>			11	7 31		, , , .	, , -	, 9, 1	, -,	,, ,	,	, , , _,	,, -	r	,			

3334 Victor Court • Santa Clara, CA 95054 • (408) 588-0200 • Fax (408) 588-0201

Matt Paulus

Certificate ID: 42636 - 3/8/2005 8:20:58 PM

Remediation Risk Management-SC 2560 Soquel Ave., Suite 8 Santa Cruz, CA 95062

Order Number: 42636

Project Name: Don Lindsay Project Number: IA220 Date Received: 3/1/2005 5:32:00 PM

P.O. Number: IA220

Certificate of Analysis - Final Report

On March 01, 2005, samples were received under chain of custody for analysis. Entech analyzes samples "as received" unless otherwise noted. The following results are included:

Matrix

Test

Method

Comments

Liquid

Gas/BTEX

EPA 8015 MOD. (Purgeable)

EPA 8020

TPH-Extractable

EPA 8015 MOD. (Extractable)

Entech Analytical Labs, Inc. is certified for environmental analyses by the State of California (#2346). If you have any questions regarding this report, please call us at 408-588-0200 ext. 225.

Sincerely,

Laurie Glantz-Murphy

Laboratory Director

3334 Victor Court, Santa Clara, CA 95054

Phone: (408) 588-0200

Fax: (408) 588-0201

Remediation Risk Management-SC

2560 Soquel Ave., Suite 8 Santa Cruz, CA 95062 Attn: Matt Paulus Project Number: IA220
Project Name: Don Lindsay
Date Received: 3/1/2005
P.O. Number: IA220
Sample Collected by: Client

Certificate of Analysis - Data Report

2:30 PM Matrix: Liquid Sample Date: 3/1/2005 Lab#: 42636-001 Sample ID: MW-1 Method: EPA 8015 MOD. (Extractable) Prep Method: EPA 3510C - Sep. funnel liquid/liquid extraction **Detection Limit** Units Prep Date Prep Batch Analysis Date QC Batch Result Flag Parameter 03/03/2005 DW4861A 03/04/2005 DW4861A μg/L TPH as Mineral Spirits (Stoddard) 550

Surrogate Surrogate Recovery Control Limits (%)
o-Terphenyi 83.5 22 - 133

Analyzed by: Jhsiang
Reviewed by: LGLANTZ

Method: EPA 8015 MOD. (Purgeable)

Parameter	Result	Flag	DF	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Gasoline	ND		ı	50	μg/L	N/A	N/A	03/03/2005	WGC4050303
Surrogate	Surrogate Recovery	Cor	ntroi Li	mits (%)				Analyzed by: mruai	n.
4-Bromofluorobenzene	93.3	•	65 -	135				Reviewed by: MTU	J

Method: EPA 8020 - Aromatic Organics Using GC/PID

Parameter	Result	Flag	DF	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	ND		1	0.5	μg/L	N/A	N/A	. 03/03/2005	WGC4050303
Toluene	0.73		1	0.5	μg/L	N/A	N/A	03/03/2005	WGC4050303
Ethyl Benzene	ND		1	0.5	μg/L	N/A	N/A	03/03/2005	WGC4050303
Xylenes, Total	ND		1	0.5	μg/L	N/A	N/A	03/03/2005	WGC4050303
Surrogate	Surrogate Recovery	Co	ntrol Li	mits (%)				Analyzed by: mrua	n
4-Bromofluorobenzene	93.6		65 -	135				Reviewed by: MT	ı

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Phone: (408) 588-0200

Fax: (408) 588-0201

Remediation Risk Management-SC

2560 Soquel Ave., Suite 8 Santa Cruz, CA 95062 Attn: Matt Paulus

Project Number: IA220 Project Name: Don Lindsay Date Received: 3/1/2005

P.O. Number: IA220

Sample Collected by: Client

Certificate of Analysis - Data Report

Lab#: 42636-002

Sample ID: MW-2

Matrix: Liquid

Sample Date: 3/1/2005

1:38 PM

Method: EPA 8015 MOD. (Extractable)

Pren Method: EPA 3510C - Sen, funnel liquid/liquid extraction

Tich hicknon. Drie obioc - privil	and contraction	idana evi							
Parameter	Result	Flag	DF	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Mineral Spirits (Stoddard)	ND		1	50	μ g/ L	03/03/2005	DW4861A	03/04/2005	DW4861A
				·					
5 C	4. D	~	antral Y i	mite (9/1)				Analyzed by: Jhsian	e

Surrogate o-Terphenyl Surrogate Recovery 58.0

22 - 133

Reviewed by: LGLANTZ

Method: EPA 8015 MOD. (Purgeable)

INCOMOG! DELLOGICATION	(B)							
Parameter	Result	Flag DF	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Gasoline	ND	1	50	μg/L	N/A	N/A	03/03/2005	WGC4050303
Surrogate	Surrogate Recovery	Control L	imits (%)				Analyzed by: mrua	n
4-Bromofluorobenzene	101	65 -	135				Reviewed by: MTI	ນ

Parameter	Result	Flag	DF	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	ND		ı	0.5	μg/L	N/A	N/A	03/03/2005	WGC4050303
Toluene	0.53		1	0.5	μg/L	N/A	N/A	03/03/2005	WGC4050303
Ethyi Benzene	ND		1	0.5	μg/L	N/A	N/A	03/03/2005	WGC4050303
Xylenes, Total	ND		1	0.5	μg/L	N/A	N/A	03/03/2005	WGC4050303
Surrogate	Surrogate Recovery	Co	ntrol Li	mits (%)				Analyzed by: mrua	R
4-Bromofluorobenzene	97.4		65 -	135				Reviewed by: MTC	J

3334 Victor Court, Santa Clara, CA 95054

Phone: (408) 588-0200

Fax: (408) 588-0201

Remediation Risk Management-SC

2560 Soquel Ave., Suite 8 Santa Cruz, CA 95062 Attn: Matt Paulus

Project Number: IA220 Project Name: Don Lindsay Date Received: 3/1/2005

P.O. Number: IA220 Sample Collected by: Client

Certificate of Analysis - Data Report

Lab#: 42636-003

Sample ID: MW-3

Matrix: Liquid

Sample Date: 3/1/2005

3:10 PM

Method: EPA 8015 MOD, (Extractable)

Prep Method: EPA 3510C - Sep. funnel liquid/liquid extraction

Parameter	Result	Flag	DF	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Mineral Spirits (Stoddard)	'nD		1	50	μg/L	03/03/2005	DW4861A	03/07/2005	DW4861A
									
Currossta Surross	ta Dacavaru	Co	ntrol I i	mits (%)				Analyzed by: Jhsian	g/

Surrogate o-Terphenyl 80.7

22 - 133

Reviewed by: LGLANTZ

Method: EPA 8015 MOD. (Purgeable)

Parameter	Result	Flag DF	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Gasoline	ND	1	50	μg/L	N/A	N/A	03/03/2005	WGC4050303
Surrogate	Surrogate Recovery	Control	Limits (%)				Analyzed by: mrua	ı
4-Bromofluorobenzene	95.5	65	- 135				Reviewed by: M'II	J

Method: EPA 8020 - Aromatic Organics Using GC/PID

Parameter	Result	Flag	DF	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	ND		1	0.5	μg/L	N/A	N/A	03/03/2005	WGC4050303
Toluene	ND		1	0.5	μg/L	N/A	N/A	03/03/2005	WGC4050303
Ethyl Benzene	ND		1	0.5	μg/L	N/A	N/A	03/03/2005	WGC4050303
Xylenes, Total	ND		1	0.5	μg/L	N/A	N/A	03/03/2005	WGC4050303
Surrogate	Surrogate Recovery	Co	ntrol Li	mits (%)				Analyzed by: mrua	<u>, </u>
4-Bromofluorobenzene	96.4		65 -	135				Reviewed by: MTU	J

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Phone: (408) 588-0200

Fax: (408) 588-0201

Remediation Risk Management-SC

2560 Soquel Ave., Suite 8 Santa Cruz, CA 95062 Attn: Matt Paulus

Project Number: IA220 Project Name: Don Lindsay Date Received: 3/1/2005

P.O. Number: IA220 Sample Collected by: Client

Certificate of Analysis - Data Report

12:00 PM Sample Date: 3/1/2005 Matrix: Liquid Lab#: 42636-004 Sample ID: MW-4

Method: EPA 8015 MOD. (Extractable)

Pren Method: EPA 3510C - Lig-Lig, Sep Funnel, MeCL

Lich Method: PLY 2210C - Cid-Fid	, och runn	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,					D D. 4-L	Analysis Date	OC Batch
Parameter	Result	Flag	DF	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC DAKII
TPH as Mineral Spirits (Stoddard)	ND		1	50	μg/L	03/03/2005	DW4861A	03/07/2005	DW4861A
ILM #2 (Attriciat Shares (Stonomen)	I L		-						
								1 - alimed how Therings	

Surrogate o-Terphenyl

Control Limits (%) Surrogate Recovery 86.5

22 - 133

Reviewed by: LGLANTZ

Method: EPA 8015 MO	D. (Purgeable)								000
Parameter	Result	Flag	DF	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Gasoline	ND		ı	50	μg/L	N/A	N/A	03/03/2005	WGC4050303
Surrogate	Surrogate Recovery	Cont	trol Li	mits (%)				Analyzed by: mrua	n
4-Bromoffuorobenzene	99.8	6.	5 -	135				Reviewed by: MT	Ŋ

Mathod: FDA 2020

Result	Flag	DF	Detection Limit	Units				
ND		1	0.5	μg/L	N/A	N/A	03/03/2005	WGC4050303
	·	1			N/A	N/A	03/03/2005	WGC4050303
							03/03/2005	WGC4050303
ND		ı	0.5					WGC4050303
ND		1	0.5	μg/L	N/A	N/A	U3/U3/2UU5	WGC4030303
	ND ND	ND ND	ND I	ND 1 0.5 ND 1 0.5	ND 1 0.5 μg/L ND 1 0.5 μg/L	ND 1 0.5 μg/L N/A ND 1 0.5 μg/L N/A	ND 1 0.5 μg/L N/A N/A ND 1 0.5 μg/L N/A N/A	ND 1 0.5 μg/L N/A N/A 03/03/2005 ND 1 0.5 μg/L N/A N/A 03/03/2005

Analyzed by: mruan Surrogate Recovery Control Limits (%) Surrogate Reviewed by: MTU 65 - 135 98.2 4-Bromofluorobenzene

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Phone: (408) 588-0200

Fax: (408) 588-0201

Remediation Risk Management-SC

2560 Soquel Ave., Suite 8 Santa Cruz, CA 95062 Attn: Matt Paulus Project Number: IA220
Project Name: Don Lindsay
Date Received: 3/1/2005
P.O. Number: IA220

Sample Collected by: Client

Certificate of Analysis - Data Report

Lah#: 42636-005	Sample ID: MV	V-5		Matrix: Liquid			Sample l	3:57 PM	
Method: EPA 8015 MOD. Prep Method: EPA 3510C Parameter	•	l, MeCL Flag	DF	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Mineral Spirits (Stoc			1	50	μg/L	03/03/2005	DW4861A	03/07/2005	DW4861A
Surrogate	Surrogate Recovery	Co	ntrol Li	mits (%)				Analyzed by: Jhsian	-
o-Terphenyl	68.5		22 -	133				Reviewed by: LGLA	INIZ

Method: EPA 8015 MO	D. (Purgeable)						_		ocn.al
Parameter	Result	Flag	DF	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Gasoline	ND		1	50	μg/L	N/A	N/A	03/03/2005	WGC4050303
Surrogate	Surrogate Recovery	Contr	rel Lin	nits (%)				Analyzed by: mruzi	n
4-Bromofluorobenzene	94.5	65	-	135				Reviewed by: MT	J

Method: EPA 8020 - Ar Parameter	Result	Flag	DF	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
	ND		,	0.5	μg/L	N/A	N/A	03/03/2005	WGC4050303
Benzene	ND ND		1	0.5	μg/L	N/A	N/A	03/03/2005	WGC4050303
Toluene Ethyl Benzene	ND		1	0.5	μg/L	N/A	N/A	03/03/2005	WGC4050303
Xyienes, Total	ND		ì	0.5	μg/L	N/A	N/A	03/03/2005	WGC4050303
	Surrogate Recovery	Co	ntrol Li	mits (%)				Analyzed by: mrua	1
Surrogate 4-Bromofluorobenzene	97.4	_	65 -	135				Reviewed by: MTU	j

Detection Limit = Detection Limit for Reporting.	
DF = Dilution and/or Prep Factor including sample volume adjustments.	

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Phone: (408) 588-0200

Fax: (408) 588-0201

Quality Control - Method Blank Liquid

QC/Prep Batch ID: DW4861A

QC/Prep Date: 3/3/2005

Validated by: LGLANTZ - 03/04/05

Method Blank

· Method: EPA 8015 MOD. (Extractable)

Parameter

Result

DF

Units

TPH as Mineral Spirits (Stoddard)

ND

PQ1.R 50

Conc. Units: µg/L

% Recovery

105

73.6

 $\mu g/L$

RPD RPD Limits

Surrogate for Blank

% Recovery Control Limits

o-Terphenyl

93.3 22 - 133

Quality Control - Laboratory Control Spike / Duplicate Results

Liquid

QC/Prep Batch ID: DW4861A

Reviewed by: LGLANTZ - 03/04/05

Recovery Limits

35 - 109

30 - 132

QC/Prep Date: 3/3/2005

Method: EPA 8015 P	MOD. (Extractable)	•	
LCS Parameter	Blank (MDL)	Spike Amt	SpikeResult
TPH as Diesel	<20	1000	1100
TPH as Motor Oil	<90	1000	740

% Recovery **Control Limits** Surrogate 22 - 133 o-Terphenyl 99.4

LCSD							
Parameter	Blank (MDL)	Spike Amt	SpikeResult	% Recovery	RPD	RPD Limits	Recovery Limits
TPH as Diesel	<20	1000	1100	107	2.0	25.0	35 - 109
TPH as Motor Oil	<90	1000	770	76.6	4.0	25.0	30 - 132

% Recovery **Control Limits** Surrogate 98.2 22 - 133 o-Terphenyl

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Phone: (408) 588-0200 Fax: (408) 588-0201

Quality Control - Method Blank Liquid

QC Batch ID: WGC4050303

Validated by: MTU - 03/07/05

QC Batch ID Analysis Date: 3/3/2005

Method Blank

Method: EPA 8015 MOD. (Purgeable)

Parameter TPH as Gasoline Result ND

DF

PQLR 50

Units $\mu g/L$

Surrogate for Blank

% Recovery Control Limits

4-Bromofluorobenzene

65 - 135 95.3

Quality Control - Laboratory Control Spike / Duplicate Results Liquid

QC Batch ID: WGC4050303

QC Batch ID Analysis Date: 3/3/2005

Reviewed by: MTU - 03/07/05

Method: EPA 8	015 MOD.	Purgeable)		 -	*			
LCS Parameter TPH as Gasoline		Blank (MDL) <4	Spike Amt 250	SpikeResult 250	% Recovery	RPD	RPD Limits	Recovery Limit 65 - 135
Surrogate 4-Bromofluorobenzene	% Recovery 96.6	Control Limits 65 - 135						
LCSD Parameter TPH as Gasoline		Blank (MDL) <4	Spike Amt 250	SpikeResuit 250	% Recovery 101	RPD 0.16	RPD Limits 25.0	Recovery Limit
Surrogate 4-Bromofluorobenzene	% Recovery 98.6	Control Limits 65 - 135						

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Phone: (408) 588-0200

Fax: (408) 588-0201

Quality Control - Method Blank Liquid

QC Batch ID: WGC4050303

QC Batch ID Analysis Date: 3/3/2005

Validated by: MTU - 03/07/05

Method Blank	Meth	od: EPA 8020				
Parameter			Result	DF	PQLR	Units
Benzene			ND	. 1	0.50	μg/L
Ethyl Benzene			ND	1	0.50	μg/L
Toluene			ND	1	0.50	μg/L
Xylenes, Total			ИD	1	0.50	μg/L
Surrogate for Blank	% Recovery	Control Limits				•
4-Bromofluorobenzene	95.7	65 - 135				

Quality Control - Laboratory Control Spike / Duplicate Results Liquid

QC Batch ID: WGC4050303

Reviewed by: MTU - 03/07/05

QC Batch ID Analysis Date: 3/3/2005

Method: EPA 8	020		.		Conc. Un	its: µg	/L	
LCS Parameter		Blank (MDL)	Spike Amt	SpikeResult	% Recovery	RPD	RPD Limits	Recovery Limits
Benzene		<0.06	8.0	8.4	105			65 - 135
Ethyl Benzene		<0.04	8.0	7.7	96.4			65 - 135
Toluene		<0.08	8.0	8.2	102			65 - 135
Xylenes, total		<0.2	24	24	99,2			65 - 135
Surrogate	% Recovery	Control Limits						
4-Bromofluorobenzene	95.5	65 - 135						
LCSD								
Parameter		Blank (MDL)	Spike Amt	SpikeResult	% Recovery	RPD	RPD Limits	Recovery Limits
Benzene		< 0.06	8.0	8.0	100	4.3	25.0	65 - 135
Ethyl Benzene		<0.04	8.0	7.4	92.6	4.0	25.0	65 - 135
Toluene	•	<0.08	0.8	7.9	98.6	3,5	25.0	65 - 135
Xylenes, total		<0.2	24	23	95.0	4.3	25.0	65 - 135
Surrogate	% Recovery	Control Limits						
4-Bromofluorobenzene	94.7	65 - 135						

3334 Victor Court , Santa Clara, CA 95054

Phone: (408) 588-0200 Fax: (408) 588-0201

Quality Control - Matrix Spike / Duplicate Results Liquid

QC Batch ID: WGC4050303

OC Batch ID Analysis Date: 3/3/2005

Reviewed by: MTU - 03/07/05

Method EPA 8015 MOD. (Purg	eable)						Conc. Uni	ts: μg/L
MS SampleNumber: 42636-001 Parameter TPH as Gasoline	Sample Result ND	Spike Amount 250	Spike Result 280	Analysis Date 3/3/2005	% Recovery	RPD	RPD Limits	Recovery Limits 65 - 135
MSD SampleNumber: 42636-001			Cuitro	Analysis			RPD	Recovery
Parameter	Sample Result	Spike Amount	Spike Result	Date	% Recovery	RPD	Limits	Limits
TPH as Gasoline	ND	250	280	3/3/2005	112	0.1	25	65 - 135
Method EPA 8020	· · ·						Conc. Un	its: μg/L
MS								
SampleNumber: 42636-001	Sample	Spike	Spike	Analysis	% Recovery	RPD	RPD Limits	Recovery Limits
Parameter	Result	Amount	Result	Date 3/3/2005	76 Recovery 197	KI D	Lights	65 - 135
Benzene	ND	2.8	3.01		84.1			65 - 135
Ethyl Benzene	ND	3.7	3.11	3/3/2005	92.0			65 - 135
Toluene	0.729	16	15.8	3/3/2005				65 - 135
Xylenes, total	ND ND	20	17.0	3/3/2005	87.3			
Surrogate % Recovery	Control Limit	rs						
4-Bromofluorobenzene 98.6	65 - 135							
MSD								
SampleNumber: 42636-001 Parameter	Sample Result	Spike Amount	Spike Result	Analysis Date	% Recovery	RPD	RPD Limits	Recovery Limits
Benzene	ND	2.8	3.10	3/3/2005	110	2.9	25	65 - 135
Ethyl Benzene	ND	3.7	3.13	3/3/2005	84.6	0.6	25	65 - 135
Toluene	0.729	16	16.4	3/3/2005	95.4	3.5	25	65 - 135
Xylenes, total	ND	20	17.2	3/3/2005	88.1	0.8	25	65 - 135
Surrogate % Recovery	Control Limi	ts						
4-Bromofluorobenzene 99	65 - 135							

Entech Analytical Labs, Inc. Chain of Custody / Analysis Request 3334 Victor Court (408) 588-0200 Santa Clara, CA 95054 (408) 588-0201 - Fax Purchase Order No.: Invoice to: (If Different) 475-8141 RRY, Inc Quote No.: Company Name: Project No.: Company: RRM, Inc 1A220 Billing Address: (If Different) Zip Code: 45062 State: Sonta Alamer GC/MS Methods General Chemistry GC Methods Sampler: Field Org. Code: **Turn Around Time** ☐ Same Dav C 1 Day Q 2 Day ☐ 3 Day Global ID: ☐ 4 Day □ 5 Day √Q 10 Day Order ID: Sample Matrix Remarks Client ID / Field Point Lab. No. Date Time 430 42636-001 -1-05 332 5 W 1200 DOS Special Instructions or Comments EDD Report 1722 ☐ EDF Report Plating LUFT-5 Metals: RCRA-8 Date: Time: Relinquished by: Received by: □ PPM-13 Al, As, Sb, Ba, Be, Bi, B, Cd, Ce, Ca, Cr, Co, Cs, Cu, Fe, Pb, Mg, Mn, Ga, Ge, Hg, In, Li, Mo, Ni, P, K, Si, Ag, Na, S, Se, Sr, Ta, Te, Tl, Sn, Ti, Zn, V, W, Zr □ CAM-17

June 2004