



groundwater resources inc.

A RESNA Company  
1500 SO. UNION AVE  
BAKERSFIELD, CALIFORNIA 93307  
General Engineering Contractor  
Class A/Haz License No. 609572

**RESNA**

Environmental Solutions  
Through Applied Science,  
Engineering & Construction

92 APR 13 1992

April 13, 1992

SHD # 3128

Ravi Arvlanantham  
Alameda County Department  
of Environmental Health  
80 Swan Way, Rm. 200  
Oakland, CA 94621

Re: Scotsman Corp., Dublin CA 94568  
Groundwater Remediation Update

Dear Mr. Arvlanantham:

This letter is an update and work plan for additional work on the groundwater remediation project underway at the Scotsman Corporation facility, 6055 Scarlett Ct., Dublin. As of March 4, 1992, the groundwater treatment system has treated 853,170 gallons of water. The size of the plume has been reduced approximately 85% since June, 1991. The total plume size has been reduced approximately 95% since the start of the project in April, 1990 (see Plate 1). The size of the plume has remained relatively constant since November, 1991 and has remained centered around MW-1, MW-6 and RW-2. These wells are in the heart of the plume and have historically had the highest concentrations. Progress in cleaning up this area of the plume has proceeded slower than expected. This is due to the extremely clayey soil present at the site which tends to restrict groundwater flow and retain contaminants. Below is a tabulation of the well concentrations found in December, 1991 and January, 1992. Copies of the analytical reports are inclosed.

	12-2-91		12-26-91		1-31-92	
	Benzene	TPH	Benzene	TPH	Benzene	TPH
MW-1	230	18000	1000	72000	NA	NA
MW-5	ND	ND	2.0	ND	NA	NA
MW-6	350	7200	290	9400	NA	NA
MW-7	NA	NA	ND	ND	NA	NA
RW-1	NA	NA	1.7	88	NA	NA
RW-2	85	1500	ND	67	1.2	ND
RW-3	ND	ND	ND	ND	ND	ND

ND = Not detected  
NA = Not analyzed

Now that the aerial extent of the plume is down to approximately 70-80 square feet, it is feasible to excavate the soil containing the remaining hydrocarbons. It is estimated that 115-130 yards of soil would have to be removed. Of that soil, approximately 77 yards would need to be disposed of or treated on site. The remaining soil would be clean overburden which would be placed back into the excavation. The excavated area would measure approximately 13 feet wide by 16 feet long by 15 feet deep (Plate 1). The

Ravi Arvlanantham  
Alameda County Department  
of Environmental Health  
April 13, 1992  
Page Two

contaminated soil will be segregated from the clean soil and a composite sample will be collected for analysis. If the composite sample results are below 100 ppm, the soil will be taken to the Alameda County landfill. If the soil is above the limit, it will be treated at the site using bio-remediation techniques. Since MW-1, MW-6 and RW-2 will be removed during the excavation, the remaining wells will be used to monitor the groundwater quality around the excavation area.

Upon completion of the soil excavation, it is recommended that the down gradient wells, RW-2 and MW-5 be sampled monthly for six months to confirm clean up. If the groundwater remains free of TPH below 100 ppb and benzene below 1 ppb after six months, a request for closure of the site will be submitted. Excavation of the soil can proceed within three weeks of receipt of your approval.

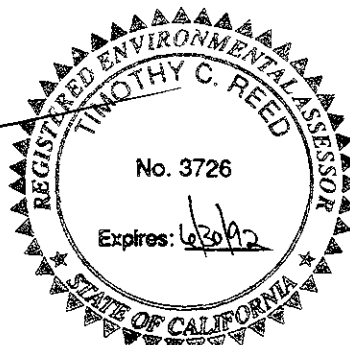
If you have further questions or require additional information, please give me a call at (805) 835-7700.

Sincerely,

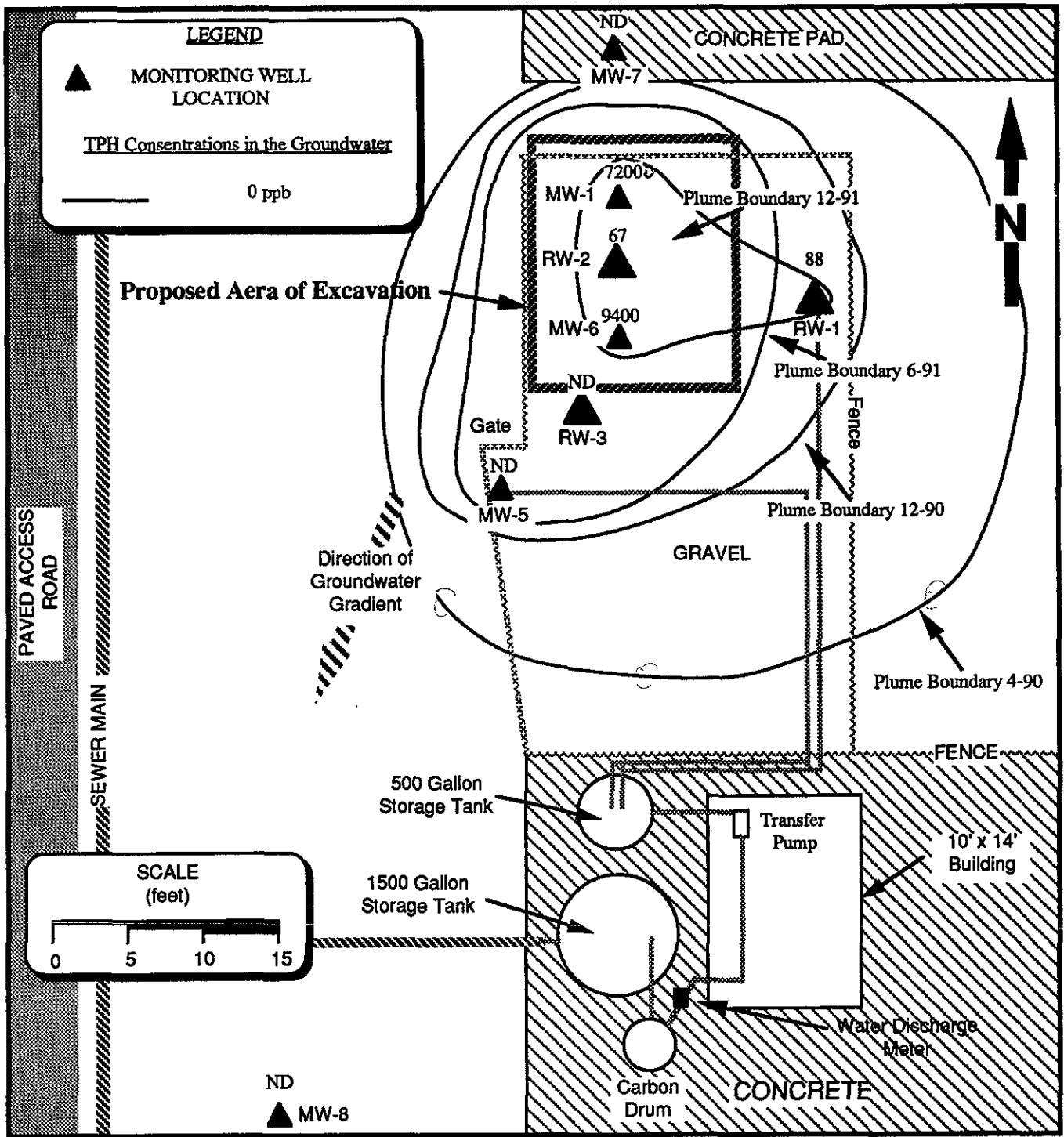


Timothy C. Reed  
Project Geologist

Plate 1  
Laboratory Analysis



cc: Ms. Amanda Howard, First Interstate Bank



**RESNA**  
 Environmental Solutions  
 Through Applied Science,  
 Engineering & Construction

Project Number: 55018

4-1-92

**SCOTSMAN CORP.**  
 DUBLIN, CA.

**TOTAL PETROLEUM  
 HYDROCARBON ISOPLETH MAP**  
 December 26, 1991

**PLATE**  
**1**

Environmental Laboratories

**RESNA**  
Working To Restore Nature

17062 Murphy Avenue  
Irvine, CA 92714-5914  
Phone: (714) 851-1544  
Fax: (714) 851-2217

Project Name: Dublin  
Project No. : 55018

February 07, 1992

Tim Reed  
RESNA Industries  
1500 S. Union Ave.  
Bakersfield, CA 93307

Dear Mr. Reed:

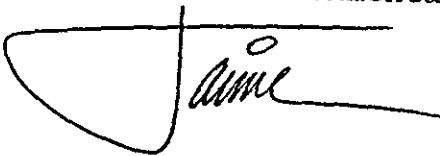
Enclosed please find the analytical results for the water samples received by RESNA Environmental Laboratories on 02-04-92.

RESNA Environmental Laboratories maintains a strict Quality Assurance/Quality Control (QA/QC) program designed to meet or exceed EPA requirements. Analytical data presented in this report met QA/QC criteria.

The specific analytical methods used and cited in this report are approved by the State of California's Department of Health Services (DOHS) under certificate number E678.

If you have any questions regarding these analyses, or if we can be of further assistance, please give us a call.

Sincerely,  
RESNA Environmental Laboratories



F.A. Jaime  
Laboratory Manager



# CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

PROJECT NO. SSO18		PROJECT NAME/SITE DUBLIN					ANALYSIS REQUESTED												P.O. #:			
SAMPLES: T. Reed		(SIGN) / (PRINT) TIM REED					NO. CONTAINERS	SAMPLE TYPE	<div style="display: flex; justify-content: space-between;"> <span>BTEX (802/8020)</span> <span>TPHg (8015)</span> <span>TPHd (8015)</span> <span>TOG 418.1/5520</span> <span>601/8010</span> <span>624/8240</span> <span>625/8270</span> </div>												REMARKS	
SAMPLE IDENTIFICATION	DATE	TIME	COMP	GRAB	PRES. USED	ICED																
INFWENT	1-31-92	13:30		X	HCl	X	2	W	X	X											W2-202-007	
EFFWENT							2															W2-202-008
RW-2							2															W2-202-009
RW-3							2															W2-202-010
TRAVEL BLANK							1															W2-202-011

RELINQUISHED BY: T. Reed	DATE 2-3-92	TIME 8:45	RECEIVED BY: Tijana Coakley	LABORATORY: APPLIED ANALYTICAL	PLEASE SEND RESULTS TO: TIM REED RESNA - BAKERSFIELD
RELINQUISHED BY: Tijana Coakley	DATE 2-3-92	TIME 3:27	RECEIVED BY: D. Klancar	REQUESTED TURNAROUND TIME: NORMAL	
RELINQUISHED BY:	DATE 2/4/92	TIME	RECEIVED BY LABORATORY: D. Klancar	RECEIPT CONDITION:	PROJECT MANAGER: TIM REED

17062 Murphy Avenue  
Irvine, CA 92714-5914  
Phone: (714) 851-1544  
Fax: (714) 851-2217

**ANALYSIS REPORT**

Attention: Tim Reed  
RESNA Industries  
1500 S. Union Ave.  
Bakersfield, CA 93307

Date Sampled: 01-31-92  
Date Received: 02-04-92  
Date Analyzed: 02-05-92  
Date Reported: 02-07-92

Project: 55018

Matrix: Water

Detection limit (ug/L)	<u>Benzene</u> 0.3	<u>Toluene</u> 0.3	<u>Ethyl- benzene</u> 0.3	<u>Total Xylenes</u> 0.5	<u>TPH</u> 50
<u>Sample description</u>					
INFLUENT** W2-202-007*	ND	ND	ND	ND	ND
EFFLUENT** W2-202-008*	ND	ND	ND	ND	ND
RW-2** W2-202-009*	1.2	ND	ND	ND	ND
RW-3** W2-202-010*	ND	ND	ND	ND	ND
TRAVEL BLANK W2-202-011*	ND	ND	ND	ND	ND

TPH = total petroleum hydrocarbons as gasoline.  
ug/L = Micrograms per liter = ppb = parts per billion.  
\* = Laboratory identification number.  
ND = Analytes not detected at or above method detection limit.  
\*\* = Analyte not characteristic of gasoline was detected.

**ANALYTICAL PROCEDURES**

BTEX-- Benzene, toluene, ethylbenzene, and total xylene isomers are measured in accordance with EPA Method 5030 followed by analysis using EPA Method 8020.  
TPH-- Total petroleum hydrocarbons as gasoline are measured in accordance with EPA Method 5030, followed by modified EPA 8015.

A RESNA Company

CHAIN OF CUSTODY RECORD

LAB DESTINATION: AGS SAC		PROJECT NUMBER: <u>55018</u>			CONDITION ON RECEIPT	PROJECT CONTACT: <u>Tom Reed</u> <u>1500 South Union</u> <u>Bakersfield, Calif 93304</u>			
SAMPLER(S): (Signature) <u>Paul Brandon</u>		P.O. NUMBER: <u>7393-6</u>				COUNTY: _____			
LAB NUMBER	SAMPLE NUMBER	DATE	TIME	SAMPLE LOCATION	CONDITION ON RECEIPT	ANALYSIS REQUESTED	SAMPLE TYPE	CONTAINER TYPE	
/ MW-1		12/26/91	1140 AM	Scotsman Dublin		[Wavy line]	TPH (gasoline) + BTXE	VO 40M	
/ MW-1		✓	✓	✓				✓	✓
/ RW-2		✓	12:25 PM	✓				✓	✓
/ RW-2		✓	✓	✓				✓	✓
/ MW-6		✓	12:00 PM	✓				✓	✓
/ MW-6		✓	✓	✓				✓	✓
/ RW-3		✓	12:35 PM	✓				✓	✓
/ RW-3		✓	✓	✓				✓	✓
/ MW-5		✓	12:05 PM	✓				✓	✓
/ MW-5		✓	✓	✓				✓	✓
/ RW-1		✓	12:15 PM	✓				✓	✓
/ RW-1		✓	✓	✓			✓	✓	
/ MW 7		✓	1	✓		✓	✓		
/ MW 7		✓	✓	✓		✓	✓		

SPECIAL INSTRUCTIONS: \_\_\_\_\_

POSSIBLE SAMPLE HAZARDS:

- 1. Relinquished by: Paul Brandon Date/Time: 12/27 10:04 AM Received by: Guy M. Coome Date/Time: 12/27/91
- 1. Relinquished by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Received by: William Lewis Date/Time: 1/8/92
- 1. Relinquished by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Received by: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Kan Brand Express 1/18/90 0820

42501 Albrae Street  
Fremont, CA 94538  
Phone: (510) 623-0775  
(800) 247-5223  
FAX: (510) 651-8754

**ANALYSIS REPORT**

Attention: Mr. Tim Reed  
GRI  
1500 South Union Ave.  
Bakersfield, CA 93307  
Project: AGS 19514-L, Project #55018

Date Sampled: 12-26-91  
Date Received: 01-08-92  
BTEX Analyzed: 01-08-92  
TPHg Analyzed: 01-08-92  
TPHd Analyzed: NR  
Matrix: Water

1020lab.frm

	Benzene	Toluene	Ethyl- benzene	Total Xylenes	TPHg	TPHd
	<u>ppb</u>	<u>ppb</u>	<u>ppb</u>	<u>ppb</u>	<u>ppb</u>	<u>ppb</u>
Detection Limit:	0.5	0.5	0.5	0.5	50	100

**SAMPLE**  
Laboratory Identification

MW-1 W1201127	1000	330	2000	3100	72000	NR
RW-2 W1201128	ND	ND	ND	ND	67	NR
MW-6 W1201129	290	4.6	430	7.2	9400	NR
RW-3 W1201130	ND	ND	ND	ND	ND	NR
MW-5 W1201131	2.0	ND	ND	ND	ND	NR

ppb = parts per billion =  $\mu\text{g/L}$  = micrograms per liter.  
ND = Not detected. Compound(s) may be present at concentrations below the detection limit.  
NR = Analysis not requested.

**ANALYTICAL PROCEDURES**

**BTEX**— Benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction using EPA Method 5030 followed by analysis using EPA Method 8020/602, which utilizes a gas chromatograph (GC) equipped with a photoionization detector (PID) and a flame-ionization detector (FID) in series.

**TPHg**—Total petroleum hydrocarbons as gasoline (low-to-medium boiling points) are measured by extraction using EPA Method 5030, followed by analysis using modified EPA Method 8015, which utilizes a GC equipped with an FID.

**TPHd**—Total petroleum hydrocarbons as diesel (high boiling points) are measured by extraction using EPA Method 3550 for soils and EPA Method 3510 for water, followed by modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

  
Laboratory Representative

January 13, 1992  
Date Reported



42501 Albrae Street  
Fremont, CA 94538  
Phone: (510) 623-0775  
(800) 247-5223  
FAX: (510) 651-8754

ANALYSIS REPORT

Attention: Mr. Tim Reed  
GRI  
1500 South Union Ave.  
Bakersfield, CA 93307  
Project: AGS 19514-L, Project #55018

Date Sampled: 12-26-91  
Date Received: 01-08-92  
BTEX Analyzed: 01-08-92  
TPHg Analyzed: 01-08-92  
TPHd Analyzed: NR  
Matrix: Water

1020lab.frm

	Benzene	Toluene	Ethyl- benzene	Total Xylenes	TPHg	TPHd
	ppb	ppb	ppb	ppb	ppb	ppb
Detection Limit:	0.5	0.5	0.5	0.5	50	100

SAMPLE

Laboratory Identification

RW-1 W1201132	1.7	ND	0.6	0.7	88	NR
MW-7 W1201133	ND	ND	ND	ND	ND	NR

ppb = parts per billion =  $\mu\text{g/L}$  = micrograms per liter.

ND = Not detected. Compound(s) may be present at concentrations below the detection limit.

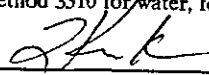
NR = Analysis not requested.

ANALYTICAL PROCEDURES

BTEX- Benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction using EPA Method 5030 followed by analysis using EPA Method 8020/602, which utilizes a gas chromatograph (GC) equipped with a photoionization detector (PID) and a flame-ionization detector (FID) in series.

TPHg-Total petroleum hydrocarbons as gasoline (low-to-medium boiling points) are measured by extraction using EPA Method 5030, followed by analysis using modified EPA Method 8015, which utilizes a GC equipped with an FID.

TPHd-Total petroleum hydrocarbons as diesel (high boiling points) are measured by extraction using EPA Method 3550 for soils and EPA Method 3510 for water, followed by modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

  
Laboratory Representative

January 13, 1992

Date Reported

Environmental Laboratories



17062 Murphy Avenue  
Irvine, CA 92714-5914  
Phone: (714) 851-1544  
Fax: (714) 851-2217

Project Name: Dublin  
Project No. : 55018

December 23, 1991

Tim Reed  
RESNA Industries  
1500 S. Union Ave.  
Bakersfield, CA 93307

Dear Mr. Reed:

Enclosed please find the analytical results for the water samples received by RESNA Environmental Laboratories on 12-13-91.

RESNA Environmental Laboratories maintains a strict Quality Assurance/Quality Control (QA/QC) program designed to meet or exceed EPA requirements. Analytical data presented in this report met QA/QC criteria.

The specific analytical methods used and cited in this report are approved by the State of California's Department of Health Services (DOHS) under certificate number E678.

If you have any questions regarding these analyses, or if we can be of further assistance, please give us a call.

Sincerely,  
RESNA Environmental Laboratories

A handwritten signature in cursive script that reads "Julia Bredt for".

F.A. Jaime  
Laboratory Manager



### CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

PROJECT NO. <b>55018</b>		PROJECT NAME/SITE <b>DUBLIN</b>					ANALYSIS REQUESTED												P.O. #: <b>7217-G</b>										
SAMPLERS (SIGN) <i>T. Reed</i>							SAMPLERS (PRINT) <b>TIM REED</b>							NO. CONTAINERS	SAMPLE TYPE	<div style="display: flex; justify-content: space-between;"> <span>BTEX (602/8020)</span> <span>TPHg (8015)</span> <span>TPHd (8015)</span> <span>TOG 418.1/5520</span> <span>601/8010</span> <span>62-18240</span> <span>62-58270</span> </div>												REMARKS	
SAMPLE IDENTIFICATION	DATE	TIME	COMP	GRAB	PRES. USED	ICED																							
<b>MW-1</b>	<b>12/2/91</b>	<b>13:55</b>					<b>2</b>	<b>W</b>	<b>X</b>	<b>X</b>									<b>W2-112-051</b>										
<b>MW-5</b>		<b>13:45</b>					<b>2</b>	<b>W</b>											<b>W2-112-052</b>										
<b>MW-6</b>		<b>13:50</b>					<b>2</b>	<b>W</b>											<b>W2-112-053</b>										
<b>RW-2</b>		<b>13:30</b>					<b>2</b>	<b>W</b>											<b>W2-112-054</b>										
<b>RW-3</b>		<b>13:30</b>					<b>2</b>	<b>W</b>											<b>W2-112-055</b>										
<b>EFFLUENT</b>		<b>13:35</b>					<b>2</b>	<b>W</b>											<b>W2-112-056</b>										
<b>TRAVEL BLANK</b>							<b>1</b>	<b>W</b>											<b>W2-112-057</b>										
RELINQUISHED BY: <i>T. Reed</i>		DATE <b>12/3/91</b>	TIME <b>11:45</b>	RECEIVED BY:			LABORATORY: <b>Resna Labs</b>						PLEASE SEND RESULTS TO: <b>Resna Bakersfield</b>																
RELINQUISHED BY:		DATE	TIME	RECEIVED BY:			REQUESTED TURNAROUND TIME: <b>Normal</b>																						
RELINQUISHED BY:		DATE <b>12/13</b>	TIME <b>9:30</b>	<i>Diana Klancar</i>																									
RELINQUISHED BY:		DATE	TIME	RECEIVED BY LABORATORY: <i>George E. O'Neal</i>			RECEIPT CONDITION: <b>OK</b>						PROJECT MANAGER: <b>Tim Reed</b>																