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Water & Soil - Chain of Custody Record & Analytical Service Request

2655 Park Center Drive, Suite A Simi Valley, California 93065

Columbia Analytical

Phone (805) 526-7161 Fax (805) 526-7270

Zn Acetate SAMPLY BANK Asc Acid Project Requirements (MRLs, QAPP) H2S04 Preservative Key A BC LEVEL TO HN03 NaOH 걸 Remarks DUPLICATE OC LEVER USM/Sh N ന 4 4 6 5 CAS Project No. CAS Contact EDD required Yes!/ No Type: Date / Col Jime: Requested Turnaround Time in Business Days (Surcharges) please circle 1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) 10 Day - Standard Analysis Method and/or Analytes Preservative Code MRL required Yes / No Mpl / PQL / J required Yes / No 9312 X \times × 0 X Semi-Volatile Organics GC/MS otherstroopdu2) 🗆 20728 🗀 323 8270C 🗆 (Subcontracted) TPH FC □ 8015M (Subcontracted) TPH Diesel Low Level 8015B

Cubcontracted) TPH Diesel 8015B (Subcontracted) □ 81208 X∃T8 TPH Gas 8015B □ Received by: (Signature) Volatile Organics GC/MS 624 □ 8260B □ Oxygenates □ TPH Gas □ Number of Containers ATTN: COMO TOMPKINS SPI GW MON 4208 Tier III - (Data Validation Package) 10% Surcharge Tier V - (client specified) COLUMBUS OF 4320 5 7 P.O. # / Billing Information 214319 / BATTELL Time: 30 Matrix 0609849 3 Project Number Project Name 19/22/08 Sampler (Print & Sign) Date Time Collected Collected CAYS, 10015 285 1601 100 92/ 3990 OLD TOWN AVE., C-205] 10/29 Company Name & Address (Reporting Information) SAN DIEGO, CA 92110 Laboratory ID Number 0 CONNER Email Address for Result Reporting Tier 1 - (Results/Default if not specified) 129/08 Report Tier Levels - please select -4008 An Employee - Owned Company 116-726-7311 0 BNITELLE Relinquished by: Bignature Tier II - (Results + QC) PINA -10 Project Manager AW-14-5 MW-14-2 MW-14-3 4-41-MM 5 アン・コー Client Sample ID £13. DUPE-

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Received by (Signature) Received by: (Signature)

Time; 3

Relinquished by: (*3) ture) Relinquished by: (Signature)

Date:

Temperature

DIVIDER SHEET

ANALYTICAL DATA FOR

Hexavalent Chromium

ANALYSIS

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:

Battelle

Service Request: P0803590

Project Name:

JPL Groundwater Monitoring 4Q08

Date Collected: 10/29/08

Project Number: G486090

Date Received: 10/29/08

Sample Matrix: WATER

Chromium, Hexavalent

Prep Method:

None

Units: mg/L (ppm)

Analysis Method: 7196A

Basis: NA

Test Notes:

Sample Name	Lab Code	PQL	MDL	Dilution Factor	Date Extracted	Date/Time Analyzed	Result	Result Notes
MW-14-5	P0803590-001	0.010	0.006	1	NA	10/29/08 15:10	ND	
MW-14-4	P0803590-002	0.010	0.006	1	NA	10/29/08 15:10	ND	
MW-14-3	P0803590-003	0.010	0.006	1	NA	10/29/08 15:10	ND	
MW-14-2	P0803590-004	0.010	0.006	1	NA	10/29/08 15:10	ND	
MW-14-1	P0803590-005	0.010	0.006	1	NA	10/29/08 15:10	ND	
DUPE-05-4Q08	P0803590-006	0.010	0.006	1	NA	10/29/08 15:10	ND	
EB-07-10/29/08	P0803590-007	0.010	0.006	1	NA	10/29/08 15:10	ND	
Method Blank	P0803590-MB	0.010	0.006	1	NA	10/29/08 15:10	ND	

Report By:NFallahi



CAS SR #P0803610

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Hexavalent Chromium Raw Data				14-25



LABORATORY REPORT

November 10, 2008

David Conner Battelle 3990 Old Town Ave., Suite C-205 San Diego, CA 92110

RE: JPL Groundwater Monitoring 4Q08 / G486090

Dear David:

Enclosed are the results of the samples submitted to our laboratory on October 30, 2008. For your reference, these analyses have been assigned our service request number P0803610.

All Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.caslab.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein. Your report contains pages.

Columbia Analytical Services, Inc. is certified by the California Department of Health Services, NELAP Laboratory Certificate No. 02115CA; Arizona Department of Health Services, Certificate No. AZ0694; Florida Department of Health, NELAP Certification E871020; New Jersey Department of Environmental Protection, NELAP Laboratory Certification ID #CA009; New York State Department of Health, NELAP NY Lab ID No. 11221; Oregon Environmental Laboratory Accreditation Program, NELAP ID: CA20007; The American Industrial Hygiene Association, Laboratory #101661; Department of the Navy (NFESC); Pennsylvania Registration No. 68-03307; TX Commission of Environmental Quality, NELAP ID T104704413-08-TX. Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact me for information corresponding to a particular certification.

If you have any questions, please call me at (805) 526-7161.

Judester

Respectfully submitted,

Columbia Analytical Services, Inc.

Sue Anderson

Project Manager

Page 1 of 1/5 2655 Park Center Drive, Suite A

Simi Valley, California 93065

(805) 526-7161

(805) 526-7270 fax



Client:

Battelle

CAS Project No:

P0803610

Project:

JPL Groundwater Monitoring 4Q08 / G486090

CASE NARRATIVE

The samples were received intact under chain of custody on October 30, 2008 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

Hexavalent Chromium by EPA Method 7196A

No anomalies were encountered during this analysis.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for utilization of less than the complete report.

Client: Battelle Service Request: P0803610

Project: JPL Groundwater Monitoring 4Q08/G486090

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	<u>DATE</u>	<u>TIME</u>
P0803610-001	MW-22-5	10/30/08	08:45
P0803610-002	MW-22-4	10/30/08	09:15
P0803610-003	MW-22-3	10/30/08	09:43
P0803610-004	MW-22-2	10/30/08	10:12
P0803610-005	MW-22-1	10/30/08	11:07
P0803610-006	DUPE-06-4Q08	10/30/08	00:00
P0803610-007	EB-08-10/30/08	10/30/08	10:52

Columbia Analytical Services, Inc.

Acronyms

CA LUFT California DHS LUFT Method

ASTM American Society for Testing and Materials
BTEX Benzene/Toluene/Ethylbenzene/Xylenes
CAS Number Chemical Abstract Service Registry Number

CFC Chlorofluorocarbon

CRDL Contract Required Detection Limit
DLCS Duplicate Laboratory Control Sample

DMS Duplicate Matrix Spike

DOH or DHS Department of Health Services

EPA U.S. Environmental Protection Agency

GC Gas Chromatography

GC/MS Gas Chromatography/Mass Spectrometry

IC Ion Chromatography
 ICB Initial Calibration Blank
 ICV Initial Calibration Verification
 LCS Laboratory Control Sample
 LUFT Leaking Underground Fuel Tank

M Modified Method

MDL Method Detection Limit

MRL Method Reporting Limit

MS Matrix Spike

MTBE Methyl tert - Butyl Ether

NA Not Applicable NC Not Calculated

ND None Detected at or above the Method Reporting/Detection Limit (MRL/MDL)

NTU Nephelometric Turbidity Units

ppb Parts Per Billionppm Parts Per Million

PQL Practical Quantitation Limit
QA/QC Quality Assurance/Quality Control
RCRA Resource Conservation and Recovery Act

RPD Relative Percent Difference SIM Selected Ion Monitoring

SM Standard Methods for the Examination of Water and Wastewater, 19th Ed., 1995. SW Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846,

Third Edition, 1986 and as amended by Updates I, II, IIA, and IIB.

TDS Total Dissolved Solids

TPH Total Petroleum Hydrocarbons
TSS Total Suspended Solids

TTLC Total Threshold Limit Concentration

VOA Volatile Organic Analyte(s)
VOC Volatile Organic Compound(s)

Qualifiers

U The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.

J The result is an estimated concentration that is less than the MRL (PQL), but greater than or equal to the MDL.

B Analyte detected in the method blank above MRL (PQL).

E Estimated; result based on response which exceeded the instrument calibration range.

N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.

D The reported result is from a dilution.

X See case narrative.

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Water & Soil - Chain of Custody Record & Analytical Service Request

2655 Park Center Drive, Suite A Simi Valley, California 93065

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r II - (Results + QC)	Tier V - (clie	Tier V - (client specified) _	4		- k	PQL / J required Yes	d Yes No	Type: 60-fact	7		manatoriumente
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Relinquished by: (Signature)

DIVIDER SHEET

ANALYTICAL DATA FOR

Hexavalent Chromium

ANALYSIS

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Battelle

Service Request: P0803610

Project Name: JPL Groundwater Monitoring 4Q08 **Project Number:** G486090

Date Collected: 10/30/08 **Date Received:** 10/30/08

Sample Matrix: WATER

Chromium, Hexavalent

Prep Method: None

Units: mg/L (ppm)

Analysis Method: 7196A

Basis: NA

Test Notes:

Sample Name	Lab Code	PQL	Dilution Factor	Date Extracted	Date/Time Analyzed	Result	Result Notes
MW-22-5	P0803610-001	0.010	1	NA	10/30/08 15:20	ND	
MW-22-4	P0803610-002	0.010	1	NA	10/30/08 15:20	ND	
MW-22-3	P0803610-003	0.010	1	NA	10/30/08 15:20	ND	
MW-22-2	P0803610-004	0.010	1	NA	10/30/08 15:20	ND	
MW-22-1	P0803610-005	0.010	1	NA	10/30/08 15:20	ND	
DUPE-06-4Q08	P0803610-006	0.010	1	NA	10/30/08 15:20	ND	
EB-08-10/30/08	P0803610-007	0.010	1	NA	10/30/08 15:20	ND	
Method Blank	P0803610-MB	0.010	1	NA	10/30/08 15:20	ND	

Annroyed By

ne Juderst Date:

Q



CAS SR #P0803634

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Hexavalent Chromium Raw Data		14-24



LABORATORY REPORT

November 11, 2008

David Conner Battelle 3990 Old Town Ave., Suite C-205 San Diego, CA 92110

RE: JPL Groundwater Monitoring 4Q08 / G486090

Dear David:

Enclosed are the results of the samples submitted to our laboratory on October 31, 2008. For your reference, these analyses have been assigned our service request number P0803634.

All Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.caslab.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein. Your report contains 24 pages.

Columbia Analytical Services, Inc. is certified by the California Department of Health Services, NELAP Laboratory Certificate No. 02115CA; Arizona Department of Health Services, Certificate No. AZ0694; Florida Department of Health, NELAP Certification E871020; New Jersey Department of Environmental Protection, NELAP Laboratory Certification ID #CA009; New York State Department of Health, NELAP NY Lab ID No. 11221; Oregon Environmental Laboratory Accreditation Program, NELAP ID: CA20007; The American Industrial Hygiene Association, Laboratory #101661; Department of the Navy (NFESC); Pennsylvania Registration No. 68-03307; TX Commission of Environmental Quality, NELAP ID T104704413-08-TX. Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact me for information corresponding to a particular certification.

If you have any questions, please call me at (805) 526-7161.

Judertz

Respectfully submitted,

Columbia Analytical Services, Inc.

Sue Anderson

Project Manager

Page 1 of _*24*

2655 Park Center Drive, Suite A

Simi Valley, California 93065

(805) 526-7161

(805) 526-7270 fax



Client:

Battelle

CAS Project No:

P0803634

Project:

JPL Groundwater Monitoring 4Q08 / G486090

CASE NARRATIVE

The samples were received intact under chain of custody on October 31, 2008 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

Hexavalent Chromium by EPA Method 7196A

No anomalies were encountered during this analysis.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for utilization of less than the complete report.

Client: Battelle Service Request: P0803634

Project: JPL Groundwater Monitoring 4Q08/G486090

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	<u>DATE</u>	<u>TIME</u>
P0803634-001	MW-4-5	10/31/08	08:04
P0803634-002	MW-4-4	10/31/08	08:33
P0803634-003	MW-4-3	10/31/08	09:17
P0803634-004	MW-4-2	10/31/08	09:47
P0803634-005	MW-4-1	10/31/08	10:25
P0803634-006	EB-09-10/31/08	10/31/08	10:02

Columbia Analytical Services, Inc.

Acronyms

CA LUFT California DHS LUFT Method

ASTM American Society for Testing and Materials
BTEX Benzene/Toluene/Ethylbenzene/Xylenes
CAS Number Chemical Abstract Service Registry Number

CFC Chlorofluorocarbon

CRDL Contract Required Detection Limit
DLCS Duplicate Laboratory Control Sample

DMS Duplicate Matrix Spike
DOH or DHS Department of Health Services

EPA U.S. Environmental Protection Agency

GC Gas Chromatography

GC/MS Gas Chromatography/Mass Spectrometry

ICIon ChromatographyICBInitial Calibration BlankICVInitial Calibration VerificationLCSLaboratory Control SampleLUFTLeaking Underground Fuel Tank

MModified MethodMDLMethod Detection LimitMRLMethod Reporting Limit

MS Matrix Spike

MTBE Methyl tert - Butyl Ether

NA Not Applicable NC Not Calculated

ND None Detected at or above the Method Reporting/Detection Limit (MRL/MDL)

NTU Nephelometric Turbidity Units

ppb Parts Per Billionppm Parts Per Million

PQL Practical Quantitation Limit

QA/QC Quality Assurance/Quality Control

RCRA Resource Conservation and Recovery Act

RPD Relative Percent Difference SIM Selected Ion Monitoring

SM Standard Methods for the Examination of Water and Wastewater, 19th Ed., 1995.
SW Test Methods for Evaluating Solid Waste, Physical/Chemical Methods SW-846,

Third Edition, 1986 and as amended by Updates I, II, IIA, and IIB.

TDS Total Dissolved Solids

TPH Total Petroleum Hydrocarbons
TSS Total Suspended Solids

TTLC Total Threshold Limit Concentration

VOA Volatile Organic Analyte(s)
VOC Volatile Organic Compound(s)

Qualifiers

U The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.

The result is an estimated concentration that is less than the MRL (PQL), but greater than or equal to the MDL.

B Analyte detected in the method blank above MRL (PQL).

E Estimated; result based on response which exceeded the instrument calibration range.

N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.

D The reported result is from a dilution.

X See case narrative.

Water & Soil - Chain of Custody Record & Analytical Service Request

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Page (

Columbia 2655 Par Analytical Simi vall Services Mc An Employee - Owned Company Phone (6

2655 Park Center Drive, Suite A Simi Valley, California 93065 Phone (805) 526-7161 Fax (805) 526-7270

80 CAS Project No. Requested Turnaround Time in Business Days (Surcharges) please circle 1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) 10 Day - Standard

Zn Acetate OC LEVEL THE EQUIP. BLANK Asc Acid Project Requirements (MRLs, QAPP) Preservative Key H2S04 HN03 NaOH Other 덩 Remarks Cooler / Blank / Ice / No Ice りって , 45/45D, N က 4 9 7 CAS Contact Temperature geoprack Petron Time 23 Time: EDD required Yes / No Type: Date: Analysis Method and/or Analytes Preservative Code WHEN WE WAS Yes / No 0 X X MRL required Yes ANO MDL / PQL / J required 8270C (Subcontracted) 255 Semi-Volatile Organics GC/MS TPH FC □ 8015M (Subcontracted) Low Level 8015B \square (Subcontracted) TPH Diesel 8015B

Cubcontracted) TPH Gas 8015B ☐ MTBE 8021B ☐ Received by: (Signature) Received by: (Signature) Received by: (Signature) S24 ☐ 8260B ☐ Oxygenates ☐ Volatile Organics GC/MS BITTLE CERALD TOMPHINS SOS KING ANE. Number of Containers 4008 Tier III - (Data Validation Package) 10% Surcharge Tier V - (client specified) COLUMBIS, OF 43201 H P.O. # / Billing Information - 2 による。 ろろろ Time: Date 1/08 Time: 30 Matrix Time: 0609845 3 Project Number Project Name Sampler (Print & Sign) Pate:-51-0/ Collected 37/2 22 176 447 1025 7001 833 Date: Date Collected 3990 OLD TOWN AVE., C-205 Company Name & Address (Reporting Information) Laboratory ID Number رو \mathcal{D} 10 のとうによ Email Address for Result Reporting Tier 1 - (Results/Default if not specified) SP DIEBO, CA Report Tier Levels - please select EB-09-10/11/58 Relinquished by: (Signature) 115-77-219 Relinquished by: (Signature) Relinquished by: (Signature) Fier II - (Results + QC) DINA Project Manager スラーテル ナーケーベン ーカーの日 MW-4-2 Client Sample ID メルーカーろ Phone

DIVIDER SHEET

ANALYTICAL DATA FOR

Hexavalent Chromium

ANALYSIS

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:

Battelle

Service Request: P0803634

Project Name:

JPL Groundwater Monitoring 4Q08

Date Collected: 10/31/08

Project Number: G486090 Sample Matrix:

WATER

Date Received: 10/31/08

Chromium, Hexavalent

Prep Method:

None

Units: mg/L (ppm)

Analysis Method: 7196A

Basis: NA

Test Notes:

Sample Name	Lab Code	PQL	MDL	Dilution Factor	Date Extracted	Date/Time Analyzed	Result	Result Notes
MW-4-5	P0803634-001	0.010	0.006	1	NA	10/31/08 14:20	ND	
MW-4-4	P0803634-002	0.010	0.006	1	NA	10/31/08 14:20	ND	
MW-4-3	P0803634-003	0.010	0.006	1	NA	10/31/08 14:20	ND	
MW-4-2	P0803634-004	0.010	0.006	1	NA	10/31/08 14:20	ND	
MW-4-1	P0803634-005	0.010	0.006	1	NA	10/31/08 14:20	ND	
EB-09-10/31/08	P0803634-006	0.010	0.006	1	NA	10/31/08 14:20	ND	
Method Blank	P0803634-MB	0.010	0.006	1	NA	10/31/08 14:20	ND	

ne Julesse Date: 11/11/08



CAS SR #P0803661

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LABORATORY REPORT

November 17, 2008

David Conner Battelle 3990 Old Town Ave., Suite C-205 San Diego, CA 92110

RE: JPL Groundwater Monitoring 4Q08 / G486090

Dear David:

Enclosed are the results of the samples submitted to our laboratory on November 4, 2008. For your reference, these analyses have been assigned our service request number P0803661.

All Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.caslab.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein. Your report contains 28 pages.

Columbia Analytical Services, Inc. is certified by the California Department of Health Services, NELAP Laboratory Certificate No. 02115CA; Arizona Department of Health Services, Certificate No. AZ0694; Florida Department of Health, NELAP Certification E871020; New Jersey Department of Environmental Protection, NELAP Laboratory Certification ID #CA009; New York State Department of Health, NELAP NY Lab ID No: 11221; Oregon Environmental Laboratory Accreditation Program, NELAP ID: CA20007; The American Industrial Hygiene Association, Laboratory #101661; Department of the Navy (NFESC); Pennsylvania Registration No. 68-03307; TX Commission of Environmental Quality, NELAP ID T104704413-08-TX. Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact me for information corresponding to a particular certification.

If you have any questions, please call me at (805) 526-7161.

Julista

Respectfully submitted,

Columbia Analytical Services, Inc.

Sue Anderson

Project Manager

Page 1 of <u>28</u>

2655 Park Center Drive, Suite A

Simi Valley, California 93065

(805) 526-7161

(805) 526-7270 fax



Client:

Battelle

CAS Project No:

P0803661

Project:

JPL Groundwater Monitoring 4Q08 / G486090

CASE NARRATIVE

The samples were received intact under chain of custody on November 4, 2008 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

Hexavalent Chromium by EPA Method 7196A

No anomalies were encountered during this analysis.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for utilization of less than the complete report.

Client: Project:

Battelle

JPL Groundwater Monitoring 4Q08/G486090

SAMPLE CROSS-REFERENCI

SAMPLE #	<u>CLIENT SAMPLE ID</u>	<u>DATE</u>	<u>TIME</u>
P0803661-001	MW-11-5	11/4/08	07:57
P0803661-002	MW-11-4	11/4/08	08:31
P0803661-003	MW-11-3	11/4/08	09:38
P0803661-004	MW-11-2	11/4/08	10:07
P0803661-005	MW-11-1	11/4/08	11:00
P0803661-006	DUPE-07-4Q08	11/4/08	00:00
P0803661-007	EB-11-11/4/08	11/4/08	10:33

Service Request: P0803661

Columbia Analytical Services, Inc.

Acronyms

CA LUFT California DHS LUFT Method

ASTM American Society for Testing and Materials
BTEX Benzene/Toluene/Ethylbenzene/Xylenes
CAS Number Chemical Abstract Service Registry Number

CFC Chlorofluorocarbon

CRDL Contract Required Detection Limit
DLCS Duplicate Laboratory Control Sample

DMS Duplicate Matrix Spike
DOH or DHS Department of Health Services

EPA U.S. Environmental Protection Agency

GC Gas Chromatography

GC/MS Gas Chromatography/Mass Spectrometry

IC Ion Chromatography
ICB Initial Calibration Blank
ICV Initial Calibration Verification
LCS Laboratory Control Sample
LUFT Leaking Underground Fuel Tank

M Modified Method

MDL Method Detection Limit

MRL Method Reporting Limit

MS Matrix Spike

MTBE Methyl tert -Butyl Ether

NA Not Applicable
NC Not Calculated

ND None Detected at or above the Method Reporting/Detection Limit (MRL/MDL)

NTU Nephelometric Turbidity Units

ppb Parts Per Billionppm Parts Per Million

PQL Practical Quantitation Limit
QA/QC Quality Assurance/Quality Control
RCRA Resource Conservation and Recovery Act

RPD Relative Percent Difference SIM Selected Ion Monitoring

SM Standard Methods for the Examination of Water and Wastewater, 19th Ed., 1995.
SW Test Methods for Evaluating Solid Waste, Physical/Chemical Methods SW-846,

Third Edition, 1986 and as amended by Updates I, II, IIA, and IIB.

TDS Total Dissolved Solids
TPH Total Petroleum Hydrocarbons
TSS Total Suspended Solids

TTLC Total Threshold Limit Concentration

VOA Volatile Organic Analyte(s)
VOC Volatile Organic Compound(s)

Qualifiers

U The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.

J The result is an estimated concentration that is less than the MRL (PQL), but greater than or equal to the MDL.

B Analyte detected in the method blank above MRL (PQL).

E Estimated; result based on response which exceeded the instrument calibration range.

N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.

D The reported result is from a dilution.

X See case narrative.

Page of

Water & Soil - Chain of Custody Record & Analytical Service Request

Columbia
Analytical
Services Nc.
An Employee - Owned Company

2655 Park Center Drive, Suite A Simi Valley, California 93065 Phone (805) 526-7161 Fax (805) 526-7270

An Employee - Owned Company Fa	Phone (805) 526-7161 Fax (805) 526-7270	26-7161 7270		Requested 7 1 Day (100%	Turnaround 1) 2 Day (75%	Fime in Bu	siness D 50%) 4 L	ays (Surch ε Jay (35%) 5	Requested Turnaround Time in Business Days (Surcharges) please circle 1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) 10 Day - Standard	rcle Day - Standard	V)	CAS Project No.	38641	
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DIVIDER SHEET

ANALYTICAL DATA FOR

Hexavalent Chromium

ANALYSIS

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:

Battelle

Service Request: P0803661

Project Name:

JPL Groundwater Monitoring 4Q08

Date Collected: 11/04/08

Project Number: G486090

Date Received: 11/04/08

Sample Matrix: WATER

Chromium, Hexavalent

Prep Method:

None

Units: mg/L (ppm)

Analysis Method: 7196A

Basis: NA

Test Notes:

Sample Name	Lab Code	PQL	MDL	Dilution Factor	Date Extracted	Date/Time Analyzed	Result	Result Notes
MW-11-5	P0803661-001	0.010	0.006	1	NA	11/04/08 16:15	ND	
MW-11-4	P0803661-002	0.010	0.006	1	NA	11/04/08 16:15	ND	
MW-11-3	P0803661-003	0.010	0.006	1	NA	11/04/08 16:15	ND	
MW-11-2	P0803661-004	0.010	0.006	1	NA	11/04/08 16:15	ND	
MW-11-1	P0803661-005	0.010	0.006	1	NA	11/04/08 16:15	ND	
DUPE-07-4Q08	P0803661-006	0.010	0.006	1	NA	11/04/08 16:15	ND	
EB-11-11/4/08	P0803661-007	0.010	0.006	1	NA	11/04/08 16:15	ND	
Method Blank	P0803661-MB	0.010	0.006	1	NA	11/04/08 16:15	ND	



CAS SR #P0803680

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Hexavalent Chromium Raw Data	 	•••••	14-26



LABORATORY REPORT

November 17, 2008

David Conner Battelle 3990 Old Town Ave., Suite C-205 San Diego, CA 92110

RE: JPL Groundwater Monitoring 4Q08 / G486090

Dear David:

Enclosed are the results of the samples submitted to our laboratory on November 5, 2008. For your reference, these analyses have been assigned our service request number P0803680.

All Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.caslab.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein. Your report contains 26 pages.

Columbia Analytical Services, Inc. is certified by the California Department of Health Services, NELAP Laboratory Certificate No. 02115CA; Arizona Department of Health Services, Certificate No. AZ0694; Florida Department of Health, NELAP Certification E871020; New Jersey Department of Environmental Protection, NELAP Laboratory Certification ID #CA009; New York State Department of Health, NELAP NY Lab ID No: 11221; Oregon Environmental Laboratory Accreditation Program, NELAP ID: CA20007; The American Industrial Hygiene Association, Laboratory #101661; Department of the Navy (NFESC); Pennsylvania Registration No. 68-03307; TX Commission of Environmental Quality, NELAP ID T104704413-08-TX. Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact me for information corresponding to a particular certification.

If you have any questions, please call me at (805) 526-7161.

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Respectfully submitted,

Columbia Analytical Services, Inc.

Sue Anderson

Project Manager

Page 1 of <u>#</u>

2655 Park Center Drive, Suite A

Simi Valley, California 93065

(805) 526-7161

(805) 526-7270 fax



Client:

Battelle

CAS Project No:

P0803680

Project:

JPL Groundwater Monitoring 4Q08 / G486090

CASE NARRATIVE

The samples were received intact under chain of custody on November 5, 2008 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

Hexavalent Chromium by EPA Method 7196A

No anomalies were encountered during this analysis.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for utilization of less than the complete report.

Client:

Battelle

Project:

JPL Groundwater Monitoring 4Q08/G486090

SAMPLE CROSS-REFERENCE

Service Request: P0803680

SAMPLE #	CLIENT SAMPLE ID	<u>DATE</u>	TIME
P0803680-001	MW-24-5	11/5/08	08:06
P0803680-002	MW-24-4	11/5/08	08:45
P0803680-003	MW-24-3	11/5/08	09:25
P0803680-004	MW-24-2	11/5/08	10:26
P0803680-005	MW-24-1	11/5/08	11:01
P0803680-006	DUPE-08-4Q08	11/5/08	00:00
P0803680-007	EB-12-11/5/08	11/5/08	10:48

Columbia Analytical Services, Inc.

Acronyms

CA LUFT California DHS LUFT Method

ASTM American Society for Testing and Materials
BTEX Benzene/Toluene/Ethylbenzene/Xylenes
CAS Number Chemical Abstract Service Registry Number

CFC Chlorofluorocarbon

CRDL Contract Required Detection Limit
DLCS Duplicate Laboratory Control Sample

DMS Duplicate Matrix Spike
DOH or DHS Department of Health Services
EPA U.S. Environmental Protection Agency

GC Gas Chromatography

GC/MS Gas Chromatography/Mass Spectrometry

IC Ion Chromatography
ICB Initial Calibration Blank
ICV Initial Calibration Verification
LCS Laboratory Control Sample
LUFT Leaking Underground Fuel Tank

M Modified Method

MDL Method Detection Limit

MRL Method Reporting Limit

MS Matrix Spike

MTBE Methyl tert -Butyl Ether

NA Not Applicable NC Not Calculated

ND None Detected at or above the Method Reporting/Detection Limit (MRL/MDL)

NTU Nephelometric Turbidity Units

ppb Parts Per Billionppm Parts Per Million

PQL Practical Quantitation Limit

QA/QC Quality Assurance/Quality Control

RCRA Resource Conservation and Recovery Act

RPD Relative Percent Difference SIM Selected Ion Monitoring

SM Standard Methods for the Examination of Water and Wastewater, 19th Ed., 1995.
SW Test Methods for Evaluating Solid Waste, Physical/Chemical Methods SW-846,

Third Edition, 1986 and as amended by Updates I, II, IIA, and IIB.

TDS Total Dissolved Solids
TPH Total Petroleum Hydrocarbons
TSS Total Suspended Solids

TTLC Total Threshold Limit Concentration

VOA Volatile Organic Analyte(s)
VOC Volatile Organic Compound(s)

Qualifiers

U The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.

J The result is an estimated concentration that is less than the MRL (PQL), but greater than or equal to the MDL.

B Analyte detected in the method blank above MRL (PQL).

E Estimated; result based on response which exceeded the instrument calibration range.

N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.

D The reported result is from a dilution.

X See case narrative.

ō Page_

Water & Soil - Chain of Custody Record & Analytical Service Request

2655 Park Center Drive, Suite A Simi Valley, California 93065

Phone (805) 526-7161 Fax (805) 526-7270

Zn Acetate F.DUID. BLANK Asc Acid Project Requirements (MRLs, QAPP) Preservative Key H2S04 HN03 NaOH 덛 Remarks DUPLICATE 0 0 4 6 2 7 CAS Project No. CAS Contact: EDD required Yes / No Tallel Requested Turnaround Time in Business Days (Surcharges) please circle 1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) 10 Day - Standard Analysis Method and/or Analytes Preservative Code Yes \No 0 X X X X MFK required Yes / No MXL / PQL / J required Semi-Volatile Organics GC/MS 825 \(\text{SVOC}\) (Subcontracted) 959 LbH EC □ 8012M (Subconfracted) TPH Diesel Low Level 8015B (Subcontracted) TPH Diesel 8015B

Cubcontracted) TPH Gas 8015B □ MTBE 8021B □ Volatile Organics GC/MS 624 □ 82608 □ Oxygenates □ TPH Gas □ TOMPKINS Number of Containers **E** Tier III - (Data Validation Package) 10% Surcharge Tier V - (client specified) 102 84 40 P.O. # / Billing Information 24 3/8 / BATTELLE SOS KING AVE. GW MON ATTN: CERALIS Matrix 3 Project Number COLUMBUS 0609845) Project Name 1975/58 Sampler (Print & Sign) Collected 908 **公公** 1026 240 77/ 216 0 Date Collected Company Name & Address (Reporting Information) 3990 OLD TOWN AVE., C-205 Laboratory ID Number Q Email Address for Result Reporting Tier 1 - (Results/Default if not specified) SAN DIEGO, CA -4008 LAVE CONNET Report Tier Levels - please select 15/50 Columbia Analytical Services no In Employee - Owned Company 1157-726-7311 Relinquished by: (Signature) ROTEUC Fier II - (Results + QC) MW-24-5 00 4-45-WM MW-24-2 MW-24-1 MW-24-3 Project Manager Client Sample ID Jupe 17 Phone EG

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DIVIDER SHEET

ANALYTICAL DATA FOR

Hexavalent Chromium

ANALYSIS

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:

Battelle

Service Request: P0803680

Project Name:

JPL Groundwater Monitoring 4Q08

Date Collected: 11/05/08

Project Number: G486090

Sample Matrix: WATER **Date Received:** 11/05/08

Chromium, Hexavalent

Prep Method:

None

Units: mg/L (ppm)

Analysis Method: 7196A

Basis: NA

Test Notes:

Sample Name	Lab Code	PQL	MDL	Dilution Factor	Date Extracted	Date/Time Analyzed	Result	Result Notes
MW-24-5	P0803680-001	0.010	0.006	1	NA	11/05/08 15:45	ND	
MW-24-4	P0803680-002	0.010	0.006	1	NA	11/05/08 15:45	ND	
MW-24-3	P0803680-003	0.010	0.006	1	NA	11/05/08 15:45	ND	
MW-24-2	P0803680-004	0.010	0.006	1	NA	11/05/08 15:45	ND	
MW-24-1	P0803680-005	0.010	0.006	1	NA	11/05/08 15:45	ND	
DUPE-08-4Q08	P0803680-006	0.010	0.006	1	NA	11/05/08 15:45	ND	
EB-12-11/5/08	P0803680-007	0.010	0.006	1	NA	11/05/08 15:45	ND	
Method Blank	P0803680-MB	0.010	0.006	1	NA	11/05/08 15:45	ND	

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CAS SR #P0803704

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Hexavalent Chromium Raw Data	14-25



LABORATORY REPORT

November 18, 2008

David Conner Battelle 3990 Old Town Ave., Suite C-205 San Diego, CA 92110

RE: JPL Groundwater Monitoring 4Q08 / G486090

Dear David:

Enclosed are the results of the samples submitted to our laboratory on November 6, 2008. For your reference, these analyses have been assigned our service request number P0803704.

All Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.caslab.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein. Your report contains ______ pages.

Columbia Analytical Services, Inc. is certified by the California Department of Health Services, NELAP Laboratory Certificate No. 02115CA; Arizona Department of Health Services, Certificate No. AZ0694; Florida Department of Health, NELAP Certification E871020; New Jersey Department of Environmental Protection, NELAP Laboratory Certification ID #CA009; New York State Department of Health, NELAP NY Lab ID No: 11221; Oregon Environmental Laboratory Accreditation Program, NELAP ID: CA20007; The American Industrial Hygiene Association, Laboratory #101661; Department of the Navy (NFESC); Pennsylvania Registration No. 68-03307; TX Commission of Environmental Quality, NELAP ID T104704413-08-TX. Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact me for information corresponding to a particular certification.

If you have any questions, please call me at (805) 526-7161.

Meroz

Respectfully submitted,

Columbia Analytical Services, Inc.

Sue Anderson

Project Manager

Page 1 of



Client: Project:

Battelle

JPL Groundwater Monitoring 4Q08 / G486090

CAS Project No:

P0803704

CASE NARRATIVE

The samples were received intact under chain of custody on November 6, 2008 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

Hexavalent Chromium by EPA Method 7196A

No anomalies were encountered during this analysis.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for utilization of less than the complete report.

Client:

Battelle

Project:

JPL Groundwater Monitoring 4Q08/G486090

Service Request: P0803704

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	<u>DATE</u>	<u>TIME</u>
P0803704-001	MW-25-5	11/6/08	08:40
P0803704-002	MW-25-4	11/6/08	09:13
P0803704-003	MW-25-3	11/6/08	09:45
P0803704-004	MW-25-2	11/6/08	10:15
P0803704-005	MW-25-1	11/6/08	10:44
P0803704-006	EB-13-11/06/08	11/6/08	10:35

Columbia Analytical Services, Inc.

Acronyms

CA LUFT California DHS LUFT Method

ASTM American Society for Testing and Materials
BTEX Benzene/Toluene/Ethylbenzene/Xylenes
CAS Number Chemical Abstract Service Registry Number

CFC Chlorofluorocarbon

CRDL Contract Required Detection Limit
DLCS Duplicate Laboratory Control Sample

DMS Duplicate Matrix Spike

DOH or DHS Department of Health Services

LLS Environmental Protection

EPA U.S. Environmental Protection Agency

GC Gas Chromatography

GC/MS Gas Chromatography/Mass Spectrometry

ICIon ChromatographyICBInitial Calibration BlankICVInitial Calibration VerificationLCSLaboratory Control SampleLUFTLeaking Underground Fuel Tank

MModified MethodMDLMethod Detection LimitMRLMethod Reporting Limit

MS Matrix Spike

MTBE Methyl tert -Butyl Ether

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NC Not Calculated

ND None Detected at or above the Method Reporting/Detection Limit (MRL/MDL)

NTU Nephelometric Turbidity Units

ppb Parts Per Billionppm Parts Per Million

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QA/QC Quality Assurance/Quality Control
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RPD Relative Percent Difference SIM Selected Ion Monitoring

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Third Edition, 1986 and as amended by Updates I, II, IIA, and IIB.

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TPH Total Petroleum Hydrocarbons
TSS Total Suspended Solids

TTLC Total Threshold Limit Concentration

VOA Volatile Organic Analyte(s)
VOC Volatile Organic Compound(s)

Qualifiers

U The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.

J The result is an estimated concentration that is less than the MRL (PQL), but greater than or equal to the MDL.

B Analyte detected in the method blank above MRL (PQL).

E Estimated; result based on response which exceeded the instrument calibration range.

N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.

D The reported result is from a dilution.

X See case narrative.

Water & Soil - Chain of Custody Record & Analytical Service Request Page (__of__

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An Employee - Owned Company	Phone (805) 526-7161 Fax (805) 526-7270	26-7161 -7270		Requested Turn 1 Day (100%) 2	Turnaround Tin	around Time in Business Days (Surcharges) please circle Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) 10 Day	iness Da 30%) 4 Da	ys (Surc ay (35%)	s Days (Surcharges) pleas 4 Day (35%) 5 Day (25%)	lease circle 5%) 10 Day	ile ay - Standard	dard	SX	CAS Project	No. 770%	7
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Client Sample ID	Laboratory ID Number	Date Collected	Time	Matrix	Number of Containers	Volatile Org 624 □ 826 TPH Gas 8	TPH Diese	Semi-Volat 528 🗆 320	n						Remarks	
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MW-25-4	3		5160					×								T
MW-25-3	<i>b</i>		2460	na ann ann an ann an ann an an an an an				X								T
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Relinquished by: (Signature)

DIVIDER SHEET

ANALYTICAL DATA FOR

Hexavalent Chromium

ANALYSIS

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:

Battelle

Service Request: P0803704

Project Name:

JPL Groundwater Monitoring 4Q08

Date Collected: 11/06/08

Project Number: G486090

Sample Matrix : WATER

Date Received: 11/06/08

Chromium, Hexavalent

Prep Method:

None

Units: mg/L (ppm)

Analysis Method: 7196A

Basis: NA

Test Notes:

Sample Name	Lab Code	PQL	MDL	Dilution Factor	Date Extracted	Date/Time Analyzed	Result	Result Notes
MW-25-5	P0803704-001	0.010	0.006	1	NA	11/16/08 14:50	ND	
MW-25-4	P0803704-002	0.010	0.006	1	NA	11/16/08 14:50	ND	
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MW-25-2	P0803704-004	0.010	0.006	1	NA	11/16/08 14:50	ND	
MW-25-1	P0803704-005	0.010	0.006	1	NA	11/16/08 14:50	ND	
EB-13-11/06/08	P0803704-006	0.010	0.006	1	NA	11/16/08 14:50	ND	
Method Blank	P0803704-MB	0.010	0.006	1	NA	11/16/08 14:50	ND	

The Inderse



LABORATORY REPORT

November 20, 2008

David Conner Battelle 3990 Old Town Ave., Suite C-205 San Diego, CA 92110

RE: JPL Groundwater Monitoring 4Q08 / G486090

Dear David:

Enclosed are the results of the samples submitted to our laboratory on November 7, 2008. For your reference, these analyses have been assigned our service request number P0803721.

All Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.caslab.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein. Your report contains 24 pages.

Columbia Analytical Services, Inc. is certified by the California Department of Health Services, NELAP Laboratory Certificate No. 02115CA; Arizona Department of Health Services, Certificate No. AZ0694; Florida Department of Health, NELAP Certification E871020; New Jersey Department of Environmental Protection, NELAP Laboratory Certification ID #CA009; New York State Department of Health, NELAP NY Lab ID No: 11221; Oregon Environmental Laboratory Accreditation Program, NELAP ID: CA20007; The American Industrial Hygiene Association, Laboratory #101661; Department of the Navy (NFESC); Pennsylvania Registration No. 68-03307; TX Commission of Environmental Quality, NELAP ID T104704413-08-TX. Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact me for information corresponding to a particular certification.

If you have any questions, please call me at (805) 526-7161.

Judest

Respectfully submitted,

Columbia Analytical Services, Inc.

Sue Anderson

Project Manager

Page 1 of <u>24</u>

2655 Park Center Drive, Suite A

Simi Vallev. California 93065

(805) 526-7161

(805) 526-7270 fax



Client:

Battelle

CAS Project No:

P0803721

Project:

JPL Groundwater Monitoring 4Q08 / G486090

CASE NARRATIVE

The samples were received intact under chain of custody on November 7, 2008 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

Hexavalent Chromium by EPA Method 7196A

No anomalies were encountered during this analysis.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for utilization of less than the complete report.

Client:

Battelle

Project:

JPL Groundwater Monitoring 4Q08/G486090

Service Request: P0803721

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
P0803721-001	MW-26-2	11/7/08	07:50
P0803721-002	MW-26-1	11/7/08	08:30
P0803721-003	EB-14-11/-7/08	11/7/08	08:17

Columbia Analytical Services, Inc.

Acronyms

CA LUFT California DHS LUFT Method

ASTM American Society for Testing and Materials Benzene/Toluene/Ethylbenzene/Xylenes BTEX CAS Number Chemical Abstract Service Registry Number

CFC Chlorofluorocarbon

CRDL Contract Required Detection Limit Duplicate Laboratory Control Sample DLCS

DMS Duplicate Matrix Spike DOH or DHS Department of Health Services

U.S. Environmental Protection Agency **EPA**

GC Gas Chromatography

GC/MS Gas Chromatography/Mass Spectrometry

IC Ion Chromatography **ICB** Initial Calibration Blank **ICV** Initial Calibration Verification LCS Laboratory Control Sample Leaking Underground Fuel Tank LUFT

M Modified Method **MDL** Method Detection Limit MRL Method Reporting Limit

Matrix Spike MS

Methyl tert -Butyl Ether **MTBE**

Not Applicable NA NC Not Calculated

None Detected at or above the Method Reporting/Detection Limit (MRL/MDL) ND

NTU Nephelometric Turbidity Units

Parts Per Billion ppb Parts Per Million ppm

PQL Practical Quantitation Limit QA/QC Quality Assurance/Quality Control Resource Conservation and Recovery Act **RCRA**

Relative Percent Difference **RPD** SIM Selected Ion Monitoring

SM Standard Methods for the Examination of Water and Wastewater, 19th Ed., 1995. Test Methods for Evaluating Solid Waste, Physical/Chemical Methods SW-846, SW

Third Edition, 1986 and as amended by Updates I, II, IIA, and IIB.

TDS Total Dissolved Solids **TPH** Total Petroleum Hydrocarbons TSS

Total Suspended Solids

TTLC Total Threshold Limit Concentration VOA Volatile Organic Analyte(s) VOC Volatile Organic Compound(s)

The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. U

The result is an estimated concentration that is less than the MRL (PQL), but greater than or equal to the MDL. J

В Analyte detected in the method blank above MRL (PQL).

E Estimated; result based on response which exceeded the instrument calibration range.

N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.

D The reported result is from a dilution.

X See case narrative.

Page [__of_

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DIVIDER SHEET

ANALYTICAL DATA FOR

Hexavalent Chromium

ANALYSIS

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:

Battelle

Project Name:

JPL Groundwater Monitoring 4Q08

Project Number: G486090

Sample Matrix: WATER Service Request: P0803721

Date Collected: 11/07/08

Date Received: 11/07/08

Chromium, Hexavalent

Prep Method:

None

Analysis Method: 7196A

Test Notes:

Units: mg/L (ppm)

Basis: NA

Sample Name	Lab Code	PQL	MDL	Dilution Factor	Date Extracted	Date/Time Analyzed	Result	Result Notes
MW-26-2	P0803721-001	0.010	0.006	1	NA	11/07/08 15:05	ND	
MW-26-1	P0803721-002	0.010	0.006	1	NA	11/07/08 15:05	ND	
EB-14-11/-7/08	P0803721-003	0.010	0.006	1	NA	11/07/08 15:05	ND	
Method Blank	P0803721-MB	0.010	0.006	1	NA	11/07/08 15:05	ND	

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CAS SR #P0803736

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Hexavalent Chromium Analytical Data		
Hexavalent Chromium Raw Data		14.24



LABORATORY REPORT

November 24, 2008

David Conner Battelle 3990 Old Town Ave., Suite C-205 San Diego, CA 92110

RE: JPL Groundwater Monitoring 4Q08 / G486090

Dear David:

Enclosed are the results of the samples submitted to our laboratory on November 10, 2008. For your reference, these analyses have been assigned our service request number P0803736.

All Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.caslab.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein. Your report contains we pages.

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If you have any questions, please call me at (805) 526-7161.

Juderfr

Respectfully submitted,

Columbia Analytical Services, Inc.

Sue Anderson

Project Manager

Page 1 of 24

2655 Park Center Drive, Suite A

(805) 526-7161

(805) 526-7270 fax



Client:

Battelle

CAS Project No:

P0803736

Project:

JPL Groundwater Monitoring 4Q08 / G486090

CASE NARRATIVE

The samples were received intact under chain of custody on November 10, 2008 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

Hexavalent Chromium by EPA Method 7196A

No anomalies were encountered during this analysis.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for utilization of less than the complete report.

Client: Battelle Service Request: P0803736

Project: JPL Groundwater Monitoring 4Q08/G486090

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	<u>DATE</u>	<u>TIME</u>
P0803736-001	MW-23-5	11/10/08	08:00
P0803736-002	MW-23-4	11/10/08	08:24
P0803736-003	MW-23-3	11/10/08	08:52
P0803736-004	MW-23-2	11/10/08	09:18
P0803736-005	MW-23-1	11/10/08	09:43
P0803736-006	EB-15-11/10/08	11/10/08	09:09

Columbia Analytical Services, Inc.

Acronyms

CA LUFT California DHS LUFT Method

ASTM American Society for Testing and Materials
BTEX Benzene/Toluene/Ethylbenzene/Xylenes
CAS Number Chemical Abstract Service Registry Number

CFC Chlorofluorocarbon

CRDL Contract Required Detection Limit
DLCS Duplicate Laboratory Control Sample

DMS Duplicate Matrix Spike
DOH or DHS Department of Health Services

EPA U.S. Environmental Protection Agency

GC Gas Chromatography

GC/MS Gas Chromatography/Mass Spectrometry

ICIon ChromatographyICBInitial Calibration BlankICVInitial Calibration VerificationLCSLaboratory Control SampleLUFTLeaking Underground Fuel Tank

M Modified Method
MDL Method Detection Limit
MRL Method Reporting Limit

MS Matrix Spike

MTBE Methyl tert - Butyl Ether

NA Not Applicable NC Not Calculated

ND None Detected at or above the Method Reporting/Detection Limit (MRL/MDL)

NTU Nephelometric Turbidity Units

ppb Parts Per Billionppm Parts Per Million

PQL Practical Quantitation Limit

QA/QC Quality Assurance/Quality Control

RCRA Resource Conservation and Recovery Act

RPD Relative Percent Difference SIM Selected Ion Monitoring

SM Standard Methods for the Examination of Water and Wastewater, 19th Ed., 1995. SW Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846,

Third Edition, 1986 and as amended by Updates I, II, IIA, and IIB.

TDS Total Dissolved Solids

TPH Total Petroleum Hydrocarbons
TSS Total Suspended Solids

TTLC Total Threshold Limit Concentration

VOA Volatile Organic Analyte(s)
VOC Volatile Organic Compound(s)

Qualifiers

U The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.

J The result is an estimated concentration that is less than the MRL (PQL), but greater than or equal to the MDL.

B Analyte detected in the method blank above MRL (PQL).

E Estimated; result based on response which exceeded the instrument calibration range.

N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.

D The reported result is from a dilution.

X See case narrative.

Water & Soil - Chain of Custody Record & Analytical Service Request

Page ____ of __

Columbia Analytical Services ^{INC.}

2655 Park Center Drive, Suite A Simi Valley, California 93065 Phone (805) 526-7161

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DIVIDER SHEET

ANALYTICAL DATA FOR

Hexavalent Chromium

ANALYSIS

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Battelle

Service Request: P0803736

Project Name: JPL Grou **Project Number:** G486090

JPL Groundwater Monitoring 4Q08

Date Collected: 11/10/08 **Date Received:** 11/10/08

Sample Matrix: WATER

Chromium, Hexavalent

Prep Method: None

Units: mg/L (ppm)

Analysis Method: 7196A

Basis: NA

Test Notes:

Sample Name	Lab Code	PQL	MDL	Dilution Factor	Date Extracted	Date/Time Analyzed	Result	Result Notes
MW-23-5	P0803736-001	0.010	0.006	1	NA	11/10/08 16:15	ND	
MW-23-4	P0803736-002	0.010	0.006	1	NA	11/10/08 16:15	ND	
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EB-15-11/10/08	P0803736-006	0.010	0.006	1	NA	11/10/08 16:15	ND	
Method Blank	P0803736-MB	0.010	0.006	1	NA	11/10/08 16:15	ND	

Approved By

Date

Q



CAS SR #P0803748

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Internal Chain of Custody	6
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Hexavalent Chromium Raw Data	14-24



LABORATORY REPORT

November 24, 2008

David Conner Battelle 3990 Old Town Ave., Suite C-205 San Diego, CA 92110

RE: JPL Groundwater Monitoring 4Q08 / G486090

Dear David:

Enclosed are the results of the samples submitted to our laboratory on November 11, 2008. For your reference, these analyses have been assigned our service request number P0803748.

All Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.caslab.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein. Your report contains pages.

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Juders

Respectfully submitted,

Columbia Analytical Services, Inc.

Sue Anderson

Project Manager

Page 1 of 24

2655 Park Center Drive, Suite A

Simi Valley, California 93065

(805) 526-7161

(805) 526-7270 fax



Client:

Battelle

CAS Project No:

P0803748

Project:

JPL Groundwater Monitoring 4Q08 / G486090

CASE NARRATIVE

The samples were received intact under chain of custody on November 11, 2008 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

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Client:

Battelle

Project:

JPL Groundwater Monitoring 4Q08/G486090

Service Request: P0803748

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	<u>DATE</u>	<u>TIME</u>
P0803748-001	MW-7	11/11/08	09:29
P0803748-002	MW-16	11/11/08	11:14

Columbia Analytical Services, Inc.

Acronyms

CA LUFT California DHS LUFT Method

ASTM American Society for Testing and Materials
BTEX Benzene/Toluene/Ethylbenzene/Xylenes
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TTLC Total Threshold Limit Concentration

VOA Volatile Organic Analyte(s)
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Qualifiers

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D The reported result is from a dilution.

X See case narrative.

Water & Soil - Chain of Custody Record & Analytical Service Request

2655 Park Center Drive, Suite A Simi Valley, California 93065 Phone (805) 526-7161 Fax (805) 526-7270

Columbia
Analytical
Services ^{Mc.}
An Employee - Owned Company

Requested Turnaround Time in Business Days (Surcharges) please circle 1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) 10 Day - Standard

CAS Project No.	CAS Contact:	Preservative Key	0 None	1 HCL 2 HNO3			5 Zn Acetate	6 Asc Acid	7 Other		Remarks									Project Requirements (MRLs, QAPP)	Y	Cooler/Blank / (Ice / No Ice	Temperature + °C
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An Employee - Owned Company Phone (805) 526-7161 Fax (805) 526-7270	Company Name & Address (Reporting Information)	ZATTELLE	SOL -2, C-205	SAN 316 CO, CA 92110		-	DAVID CONJETA	Fax	619-726-7311	Email Address for Result Reporting Sampler (Client Sample ID Laboratory Date ID Number Collected	MW-7 / 1/08	31-WM							Report Tier Levels - please select Tier I - (Results/Default if not specified) Tier II - (Data Validation Tier V - (client specified)	Relinquished by-tSignature) Polinquish (Criston)	industries (Signature)	Helinquisned by: (Signature)

DIVIDER SHEET

ANALYTICAL DATA FOR

Hexavalent Chromium

ANALYSIS

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Battelle

Service Request: P0803748

Project Name : JPL Groundwater Monitoring 4Q08

Date Collected: 11/11/08 **Date Received:** 11/11/08

Project Number: G486090 **Sample Matrix:** WATER

Chromium, Hexavalent

Prep Method: None

Units: mg/L (ppm)

Analysis Method: 7196A

Basis: NA

Test Notes:

Sample Name	Lab Code	PQL	MDL	Dilution Factor	Date Extracted	Date/Time Analyzed	Result	Result Notes
MW-7	P0803748-001	0.010	0.006	1	NA	11/11/08 16:00	ND	
MW-16	P0803748-002	0.010	0.006	1	NA	11/11/08 16:00	ND	
Method Blank	P0803748-MB	0.010	0.006	1	NA	11/11/08 16:00	ND	

Annroved By

Date

C



CAS SR #P0803764

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LABORATORY REPORT

November 24, 2008

David Conner Battelle 3990 Old Town Ave., Suite C-205 San Diego, CA 92110

RE: JPL Groundwater Monitoring 4Q08 / G486090

Dear David:

Enclosed are the results of the samples submitted to our laboratory on November 12, 2008. For your reference, these analyses have been assigned our service request number P0803764.

All Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.caslab.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein. Your report contains 25 pages.

Columbia Analytical Services, Inc. is certified by the California Department of Health Services, NELAP Laboratory Certificate No. 02115CA; Arizona Department of Health Services, Certificate No. AZ0694; Florida Department of Health, NELAP Certification E871020; New Jersey Department of Environmental Protection, NELAP Laboratory Certification ID #CA009; New York State Department of Health, NELAP NY Lab ID No: 11221; Oregon Environmental Laboratory Accreditation Program, NELAP ID: CA20007; The American Industrial Hygiene Association, Laboratory #101661; Department of the Navy (NFESC); Pennsylvania Registration No. 68-03307; TX Commission of Environmental Quality, NELAP ID T104704413-08-TX. Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact me for information corresponding to a particular certification.

If you have any questions, please call me at (805) 526-7161.

Juderser

Respectfully submitted,

Columbia Analytical Services, Inc.

Sue Anderson Project Manager

Page 1 of <u>25</u>

2655 Park Center Drive, Suite A

Simi Valley, California 93065

(805) 526-7161

(805) 526-7270 fax



Client:

Battelle

CAS Project No:

P0803764

Project:

JPL Groundwater Monitoring 4Q08 / G486090

CASE NARRATIVE

The samples were received intact under chain of custody on November 12, 2008 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

Hexavalent Chromium by EPA Method 7196A

No anomalies were encountered during this analysis.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for utilization of less than the complete report.

Client: Battelle Service Request: P0803764

Project: JPL Groundwater Monitoring 4Q08/G486090

SAMPLE CROSS-REFERENCE

SAMPLE#	CLIENT SAMPLE ID	<u>DATE</u>	<u>TIME</u>
P0803764-001	MW-10	11/12/08	09:13
P0803764-002	MW-15	11/12/08	10:36

Columbia Analytical Services, Inc.

Acronyms

CA LUFT California DHS LUFT Method

ASTM American Society for Testing and Materials
BTEX Benzene/Toluene/Ethylbenzene/Xylenes
CAS Number Chemical Abstract Service Registry Number

CFC Chlorofluorocarbon

CRDL Contract Required Detection Limit
DLCS Duplicate Laboratory Control Sample

DMS Duplicate Matrix Spike
DOH or DHS Department of Health Services

EPA U.S. Environmental Protection Agency

GC Gas Chromatography

GC/MS Gas Chromatography/Mass Spectrometry

ICIon ChromatographyICBInitial Calibration BlankICVInitial Calibration VerificationLCSLaboratory Control SampleLUFTLeaking Underground Fuel Tank

MModified MethodMDLMethod Detection LimitMRLMethod Reporting Limit

MS Matrix Spike

MTBE Methyl tert -Butyl Ether

NA Not Applicable NC Not Calculated

ND None Detected at or above the Method Reporting/Detection Limit (MRL/MDL)

NTU Nephelometric Turbidity Units

ppb Parts Per Billionppm Parts Per Million

PQL Practical Quantitation Limit
QA/QC Quality Assurance/Quality Control
RCRA Resource Conservation and Recovery Act

RPD Relative Percent Difference SIM Selected Ion Monitoring

SM Standard Methods for the Examination of Water and Wastewater, 19th Ed., 1995. SW Test Methods for Evaluating Solid Waste, Physical/Chemical Methods SW-846,

Third Edition, 1986 and as amended by Updates I, II, IIA, and IIB.

TDS Total Dissolved Solids

TPH Total Petroleum Hydrocarbons

TSS Total Suspended Solids

TTLC Total Threshold Limit Concentration
VOA Volatile Organic Analyte(s)
VOC Volatile Organic Compound(s)

Qualifiers

U The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.

J The result is an estimated concentration that is less than the MRL (PQL), but greater than or equal to the MDL.

B Analyte detected in the method blank above MRL (PQL).

E Estimated; result based on response which exceeded the instrument calibration range.

N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.

D The reported result is from a dilution.

X See case narrative.

oţ Page /

Water & Soil - Chain of Custody Record & Analytical Service Request

2655 Park Center Drive, Suite A Simi Valley, California 93065

Columbia Analytical

An Employee - Owned Company

Phone (805) 526-7161 Fax (805) 526-7270

CAS Project No. Requested Turnaround Time in Business Days (Surcharges) please circle 1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) 10 Day - Standard

Zn Acetate Asc Acid Project Requirements (MRLs, QAPP) H2S04 Preservative Key HN03 NaOH 검 Remarks Pathillor Time 255 Cooler Blank / Ice / No Ice 0 0 4 6 9 7 CAS Contact pate: 2/6 V Time 200 EDD required Yes/ No Type: Analysis Method and/or Analytes Preservative Code MRL required Yes (No) MDL / PQL / J required Yes /)No 8270C □ (Subcontracted) □ 979 Semi-Volatile Organics GC/MS TPH FC [8015M (Subcontracted) TPH Diesel Low Level 8015B 🗆 (Subcontracted) TPH Diesel 8015B

Cubcontracted) BTEX 8021B □ MTBE 8021B □ Received by: (Signature) Received by: (Signature) Received by: (Signature) □ 8260B □ Oxygenates □ TPH Gas 🗆 Volatile Organics GC/MS Number of Containers MIN: GERALD TOMPKINS 158 43201 Tier III - (Data Validation Package) 10% Surcharge Tier V - (client specified) SOS KING AVE. P.O. # / Billing Information 2:43:9 / BATTELLE COLUMBUS, OF SPI GW HOW Matrix 0609849 Time: Project Number Project Name Sampler (Print & Sign) Time Collected 0913 036 Date Collected 80/L1/W 3990 OLD TOWN AVE., C-205 Company Name & Address (Reporting Information) SAN DIEGO, CA 92110 Laboratory ID Number 0 Email Address for Result Reporting Fier 1 - (Results/Default if not specified) CONNER Report Tier Levels - please select 1152-726-7311 Relinquished by: (Signature) Tier II - (Results + QC) PERA Project Manager Client Sample ID 01-MM MW-19

DIVIDER SHEET

ANALYTICAL DATA FOR

Hexavalent Chromium

ANALYSIS

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:

Battelle

Service Request: P0803764

Project Name:

JPL Groundwater Monitoring 4Q08

Date Collected: 11/12/08

Project Number: G486090 Sample Matrix: WATER

Date Received: 11/12/08

Chromium, Hexavalent

Prep Method:

None Analysis Method: 7196A Units: mg/L (ppm)

Basis: NA

Test Notes:

				Dilution	Date	Date/Time		Result
Sample Name	Lab Code	PQL	MDL	Factor	Extracted	Analyzed	Result	Notes
MW-10	P0803764-001	0.010	0.006	1	NA	11/12/08 16:30	ND	
MW-15	P0803764-002	0.010	0.006	1	NA	11/12/08 16:30	ND	
Method Blank	P0803764-MB	0.010	0.006	1	NA	11/12/08 16:30	ND	



CAS SR #P0803787

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Havavalant Chromium Bayy Data			14.24



LABORATORY REPORT

November 25, 2008

David Conner Battelle 3990 Old Town Ave., Suite C-205 San Diego, CA 92110

RE: JPL Groundwater Monitoring 4Q08 / G486090

Dear David:

Enclosed are the results of the samples submitted to our laboratory on November 13, 2008. For your reference, these analyses have been assigned our service request number P0803787.

All Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.caslab.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein. Your report contains $\mathcal{A}\psi$ pages.

Columbia Analytical Services, Inc. is certified by the California Department of Health Services, NELAP Laboratory Certificate No. 02115CA; Arizona Department of Health Services, Certificate No. AZ0694; Florida Department of Health, NELAP Certification E871020; New Jersey Department of Environmental Protection, NELAP Laboratory Certification ID #CA009; New York State Department of Health, NELAP NY Lab ID No: 11221; Oregon Environmental Laboratory Accreditation Program, NELAP ID: CA20007; The American Industrial Hygiene Association, Laboratory #101661; Department of the Navy (NFESC); Pennsylvania Registration No. 68-03307; TX Commission of Environmental Quality, NELAP ID T104704413-08-TX. Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact me for information corresponding to a particular certification.

If you have any questions, please call me at (805) 526-7161.

(Indlessor

Respectfully submitted,

Columbia Analytical Services, Inc.

Sue Anderson Project Manager

Page 1 of <u>24</u>

2655 Park Center Drive, Suite A

Simi Valley, California 93065

(805) 526-7161

(805) 526-7270 fax



Client:

Battelle

CAS Project No:

P0803787

Project:

JPL Groundwater Monitoring 4Q08 / G486090

CASE NARRATIVE

The samples were received intact under chain of custody on November 13, 2008 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

Hexavalent Chromium by EPA Method 7196A

No anomalies were encountered during this analysis.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for utilization of less than the complete report.

Client:

Battelle

Project:

JPL Groundwater Monitoring 4Q08/G486090

Service Request: P0803787

SAMPLE CROSS-REFERENCE

<u>SAMPLE #</u>	CLIENT SAMPLE ID	<u>DATE</u>	TIME
P0803787-001	MW-13	11/13/08	09:09
P0803787-002	MW-8	11/13/08	10:59

Columbia Analytical Services, Inc.

Acronyms

CA LUFT California DHS LUFT Method

ASTM American Society for Testing and Materials
BTEX Benzene/Toluene/Ethylbenzene/Xylenes
CAS Number Chemical Abstract Service Registry Number

CFC Chlorofluorocarbon

CRDL Contract Required Detection Limit
DLCS Duplicate Laboratory Control Sample

DMS Duplicate Matrix Spike
DOH or DHS Department of Health Services

EPA U.S. Environmental Protection Agency

GC Gas Chromatography

GC/MS Gas Chromatography/Mass Spectrometry

ICIon ChromatographyICBInitial Calibration BlankICVInitial Calibration VerificationLCSLaboratory Control SampleLUFTLeaking Underground Fuel Tank

MModified MethodMDLMethod Detection LimitMRLMethod Reporting Limit

MS Matrix Spike

MTBE Methyl tert -Butyl Ether

NA Not Applicable NC Not Calculated

ND None Detected at or above the Method Reporting/Detection Limit (MRL/MDL)

NTU Nephelometric Turbidity Units

ppb Parts Per Billionppm Parts Per Million

PQL Practical Quantitation Limit
QA/QC Quality Assurance/Quality Control
RCRA Resource Conservation and Recovery Act

RPD Relative Percent Difference SIM Selected Ion Monitoring

SM Standard Methods for the Examination of Water and Wastewater, 19th Ed., 1995.
SW Test Methods for Evaluating Solid Waste, Physical/Chemical Methods SW-846,

Third Edition, 1986 and as amended by Updates I, II, IIA, and IIB.

TDS Total Dissolved Solids
TPH Total Petroleum Hydrocarbons
TSS Total Suspended Solids

TTLC Total Threshold Limit Concentration

VOA Volatile Organic Analyte(s)
VOC Volatile Organic Compound(s)

Qualifiers

U The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.

J The result is an estimated concentration that is less than the MRL (PQL), but greater than or equal to the MDL.

B Analyte detected in the method blank above MRL (PQL).

Estimated; result based on response which exceeded the instrument calibration range.

N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.

D The reported result is from a dilution.

X See case narrative.

Water & Soil - Chain of Custody Record & Analytical Service Request

2655 Park Center Drive, Suite A

Columbia Analytical

Simi Valley, California 93065 Phone (805) 526-7161

Zn Acetate Asc Acid 3/3/ Project Requirements (MRLs, QAPP) Preservative Key H2S04 HN03 NaOH 덩 Remarks 20 CH26 2 ന 4 5 9 7 CAS Project No. CAS Contact EDD required Yes No Type: Requested Turnaround Time in Business Days (Surcharges) please circle 1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) 10 Day - Standard Analysis Method and/or Analytes Preservative Code MRL required Yes (No MDL / BQL / required Yes) No O 8270C 🗆 (Subcontracted) 225 SM\DS enics GC\MS TPH FC 🗆 8015M (Subconfracted) Low Level 8015B

(Subcontracted) TPH Diesel 8015B (Subcontracted) TPH Gas 8015B □ BTEX 8021B □ MTBE 8021B Volatile Organics GC/MS 624 ☐ 8260B ☐ Oxygenates ☐ TPH Gas ☐ ATTN: CERNID TOMPKINS SOST KINC AVE. Number of Containers JAL G.W. MON. 4008 Tier V - (Data Validation Package) 10% Surcharge Corumbus, 04 43201 4 P.O. # / Billing Information 243 9/847 TELLE Matrix 0609845 3 Project Number Project Name Sampler (Print & Sign) Time Collected 1059 6060 Date Collected 3/08 3990 OLD TOWN AVE., C-205 Company Name & Address (Reporting Information) Fax (805) 526-7270 Laboratory ID Number SAN DIECO, CA 92110 Email Address for Result Reporting Tier 1 - (Results/Default if not specified) GONDER Report Tier Levels - please select 619-726-7311 An Employee - Owned Company Tier II - (Results + QC) Project Manager DAVID Client Sample ID ARTO MILL Phone

Cooler /Blank / Ice / No Ice

Paté: 3/54 Time: (2): 5

Received by: (Signature

Relinquished by: (Signature

Relinquishe (b) (Sign

Received by: (S)

Lime's

Temperature

DIVIDER SHEET

ANALYTICAL DATA FOR

Hexavalent Chromium

ANALYSIS

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:

Battelle

Service Request: P0803787

Project Name:

JPL Groundwater Monitoring 4Q08

Date Collected: 11/13/08

Date Received: 11/13/08

Project Number: G486090 **Sample Matrix:** WATER

Chromium, Hexavalent

Prep Method:

None

Units: mg/L (ppm)

Analysis Method: 7196A

Basis: NA

Test Notes:

Sample Name	Lab Code	PQL	MDL	Dilution Factor	Date Extracted	Date/Time Analyzed	Result	Result Notes
MW-13	P0803787-001	0.010	0.006	1	NA	11/13/08 16:15	0.033	
MW-8	P0803787-002	0.010	0.006	1	NA	11/13/08 16:15	ND	
Method Blank	P0803787-MB	0.010	0.006	1	NA	11/13/08 16:15	ND	

Date:

9



CAS SR #P0803836

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Hexavalent Chromium Raw Data		 	14-25



LABORATORY REPORT

November 25, 2008

David Conner
Battelle
3990 Old Town Ave., Suite C-205
San Diego, CA 92110

RE: JPL Groundwater Monitoring 4Q08 / G486090

Dear David:

Enclosed are the results of the samples submitted to our laboratory on November 17, 2008. For your reference, these analyses have been assigned our service request number P0803836.

All Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.caslab.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein. Your report contains 25 pages.

Columbia Analytical Services, Inc. is certified by the California Department of Health Services, NELAP Laboratory Certificate No. 02115CA; Arizona Department of Health Services, Certificate No. AZ0694; Florida Department of Health, NELAP Certification E871020; New Jersey Department of Environmental Protection, NELAP Laboratory Certification ID #CA009; New York State Department of Health, NELAP NY Lab ID No: 11221; Oregon Environmental Laboratory Accreditation Program, NELAP ID: CA20007; The American Industrial Hygiene Association, Laboratory #101661; Department of the Navy (NFESC); Pennsylvania Registration No. 68-03307; TX Commission of Environmental Quality, NELAP ID T104704413-08-TX. Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact me for information corresponding to a particular certification.

If you have any questions, please call me at (805) 526-7161.

Judeste

Respectfully submitted,

Columbia Analytical Services, Inc.

Sue Anderson Project Manager

Page 1 of *25*

2655 Park Center Drive, Suite A

Simi Valley, California 93065

(805) 526-7161

(805) 526-7270 fax



Client:

Battelle

CAS Project No:

P0803836

Project:

JPL Groundwater Monitoring 4Q08 / G486090

CASE NARRATIVE

The samples were received intact under chain of custody on November 17, 2008 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the sample(s) at the time of sample receipt.

Hexavalent Chromium by EPA Method 7196A

No anomalies were encountered during this analysis.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for utilization of less than the complete report.

Client: Battelle Service Request: P0803836

Project: JPL Groundwater Monitoring 4Q08/G486090

SAMPLE CROSS-REFERENCE

 SAMPLE #
 CLIENT SAMPLE ID
 DATE
 TIME

 P0803836-001
 MW-01
 11/17/08
 09:00

 P0803836-002
 MW-09
 11/17/08
 10:23

Columbia Analytical Services, Inc.

Acronyms

CA LUFT California DHS LUFT Method

ASTM American Society for Testing and Materials
BTEX Benzene/Toluene/Ethylbenzene/Xylenes
CAS Number Chemical Abstract Service Registry Number

CFC Chlorofluorocarbon

CRDL Contract Required Detection Limit

DLCS Duplicate Laboratory Control Sample

DMS Duplicate Matrix Spike

DOH or DHS Department of Health Services

EPA U.S. Environmental Protection Agency

GC Gas Chromatography

GC/MS Gas Chromatography/Mass Spectrometry

ICIon ChromatographyICBInitial Calibration BlankICVInitial Calibration VerificationLCSLaboratory Control SampleLUFTLeaking Underground Fuel Tank

M Modified Method

MDL Method Detection Limit

MRL Method Reporting Limit

MS Matrix Spike

MTBE Methyl tert -Butyl Ether

NA Not Applicable NC Not Calculated

ND None Detected at or above the Method Reporting/Detection Limit (MRL/MDL)

NTU Nephelometric Turbidity Units

ppb Parts Per Billionppm Parts Per Million

PQL Practical Quantitation Limit

QA/QC Quality Assurance/Quality Control

RCRA Resource Conservation and Recovery Act

RPD Relative Percent Difference SIM Selected Ion Monitoring

SM Standard Methods for the Examination of Water and Wastewater, 19th Ed., 1995.
SW Test Methods for Evaluating Solid Waste, Physical/Chemical Methods SW-846,

Third Edition, 1986 and as amended by Updates I, II, IIA, and IIB.

TDS Total Dissolved Solids

TPH Total Petroleum Hydrocarbons
TSS Total Suspended Solids

TTLC Total Threshold Limit Concentration

VOA Volatile Organic Analyte(s)
VOC Volatile Organic Compound(s)

Qualifiers

U The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.

J The result is an estimated concentration that is less than the MRL (PQL), but greater than or equal to the MDL.

B Analyte detected in the method blank above MRL (PQL).

E Estimated; result based on response which exceeded the instrument calibration range.

N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.

D The reported result is from a dilution.

X See case narrative.

Page ____ of__

CAS Project No.

Water & Soil - Chain of Custody Record & Analytical Service Request

2655 Park Center Drive, Suite A Simi Valley, California 93065

Columbia Analytical

Phone (805) 526-7161 Fax (805) 526-7270

Zn Acetate Asc Acid Project Requirements (MRLs, QAPP) Preservative Key H2S04 HN03 NaOH H HCL Remarks Ice / No Ice & LEVEL ന 1007 / Blank CAS Contact Cooley Time: 234 EDD required (less) No Type: Requested Turnaround Time in Business Days (Surcharges) please circle 1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) 10 Day - Standard Analysis Method and/or Analytes Preservative Code MPECTEQUIFED YES /NO MAL / POL / J required Yes / No 0 X Semi-Volatile Organics GC/MS 625 □ 8270C □ (Subcontracted) TPH FC 🗆 8015M (Subcontracted) TPH Diesel Low Level 8015B 🗆 (Subcontracted) TPH Diesel 8015B □ (Subcontracted) BTEX 8021B 🗆 MTBE 8021B TPH Gas 8015B □ Received by: (Signature Volatille Organics GC/MS 624 □ 8260B □ Oxygenates □ TPH Gas □ JPI GW. MON, 4008 ATTN: CERALD TOMPKINS Number of Containers COLUMBUS, OH 43201 Tier III - (Data Validation Package) 10% Surcharge Tier V - (client specified) SOF KING AUE P.O. # / Billing Information 214319/ 34TELLE Matrix 0609859 Project Number Project Name Sampler (Print & Sign) Date Time Collected Collected 0600 1023 Date: Dafe; 11/17/08 Company Name & Address (Reporting Information) 3990 OLD TOWN AVE, C-205 Laboratory ID Number 520 DIEGO, CA 92110 Email Address for Result Reporting Tier I - (Results/Default if not specified) CONNER Report Tier Levels - please select An Employee - Owned Company 1151-726-7311 Relinquished by: (Signature) Fier II - (Results + QC) BATTELE Project Manager RICA Client Sample ID JU-0-40-MN **Relinquished** Phone

DIVIDER SHEET

ANALYTICAL DATA FOR

Hexavalent Chromium

ANALYSIS

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:

Battelle

Service Request: P0803836

Project Name:

JPL Groundwater Monitoring 4Q08

Date Collected: 11/17/08

Project Number: G486090

Date Received: 11/17/08

Sample Matrix: WATER

Chromium, Hexavalent

Prep Method:

None

Units: mg/L (ppm)

Analysis Method: 7196A

Basis: NA

Test Notes:

Sample Name	Lab Code	PQL	MDL	Dilution Factor	Date Extracted	Date/Time Analyzed	Result	Result Notes
MW-01	P0803836-001	0.010	0.006	1	NA	11/17/08 16:15	ND	
MW-09	P0803836-002	0.010	0.006	1	NA	11/17/08 16:15	ND	
Method Blank	P0803836-MB	0.010	0.006	1	NA	11/17/08 16:15	ND	

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CAS SR #P0803853

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Hexavalent Chromium Raw Data	······	14-25



LABORATORY REPORT

November 26, 2008

David Conner Battelle 3990 Old Town Ave., Suite C-205 San Diego, CA 92110

RE: JPL Groundwater Monitoring 4Q08 / G486090

Dear David:

Enclosed are the results of the samples submitted to our laboratory on November 18, 2008. For your reference, these analyses have been assigned our service request number P0803853.

Columbia Analytical Services, Inc. is certified by the California Department of Health Services, NELAP Laboratory Certificate No. 02115CA; Arizona Department of Health Services, Certificate No. AZ0694; Florida Department of Health, NELAP Certification E871020; New Jersey Department of Environmental Protection, NELAP Laboratory Certification ID #CA009; New York State Department of Health, NELAP NY Lab ID No: 11221; Oregon Environmental Laboratory Accreditation Program, NELAP ID: CA20007; The American Industrial Hygiene Association, Laboratory #101661; Department of the Navy (NFESC); Pennsylvania Registration No. 68-03307; TX Commission of Environmental Quality, NELAP ID T104704413-08-TX. Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact me for information corresponding to a particular certification.

If you have any questions, please call me at (805) 526-7161.

e Ondert

Respectfully submitted,

Columbia Analytical Services, Inc.

Sue Anderson Project Manager

> Page 1 of <u>25</u>



Client:

Battelle

CAS Project No:

P0803853

Project:

JPL Groundwater Monitoring 4Q08 / G486090

CASE NARRATIVE

The samples were received intact under chain of custody on November 18, 2008 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

Hexavalent Chromium by EPA Method 7196A

No anomalies were encountered during this analysis.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for utilization of less than the complete report.

Client: Battelle Service Request: P0803853

Project: JPL Groundwater Monitoring 4Q08/G486090

SAMPLE CROSS-REFERENCE

SAMPLE #	<u>CLIENT SAMPLE ID</u>	<u>DATE</u>	<u>TIME</u>
P0803853-001	MW-20-5RS	11/18/08	08:24
P0803853-002	MW-20-4RS	11/18/08	09:46
P0803853-003	MW-20-3RS	11/18/08	10:57
P0803853-004	MW-20-2RS	11/18/08	11:53
P0803853-005	MW-20-1RS	11/18/08	12:54
P0803853-006	EB-16-11/18/08	11/18/08	12:33

Columbia Analytical Services, Inc.

Acronyms

California DHS LUFT Method CA LUFT

American Society for Testing and Materials ASTM BTEX Benzene/Toluene/Ethylbenzene/Xylenes Chemical Abstract Service Registry Number **CAS Number**

Chlorofluorocarbon **CFC**

CRDL Contract Required Detection Limit **DLCS Duplicate Laboratory Control Sample**

Duplicate Matrix Spike **DMS DOH or DHS** Department of Health Services

EPA U.S. Environmental Protection Agency

Gas Chromatography GC/MS Gas Chromatography/Mass Spectrometry

Ion Chromatography IC Initial Calibration Blank **ICB** Initial Calibration Verification **ICV** LCS Laboratory Control Sample Leaking Underground Fuel Tank **LUFT**

Modified Method M Method Detection Limit MDL Method Reporting Limit MRL

MS Matrix Spike

GC

Methyl tert - Butyl Ether **MTBE** NA Not Applicable

Not Calculated NC

None Detected at or above the Method Reporting/Detection Limit (MRL/MDL) ND

Nephelometric Turbidity Units NTU

Parts Per Billion ppb Parts Per Million ppm

Practical Quantitation Limit **PQL** Quality Assurance/Quality Control QA/QC **RCRA** Resource Conservation and Recovery Act

RPD Relative Percent Difference Selected Ion Monitoring SIM

Standard Methods for the Examination of Water and Wastewater, 19th Ed., 1995. SM Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, SW

Third Edition, 1986 and as amended by Updates I, II, IIA, and IIB.

TDS Total Dissolved Solids TPH Total Petroleum Hydrocarbons Total Suspended Solids TSS

TTLC Total Threshold Limit Concentration

VOA Volatile Organic Analyte(s) VOC Volatile Organic Compound(s)

 \mathbf{U} The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.

J The result is an estimated concentration that is less than the MRL (PQL), but greater than or equal to the MDL.

В Analyte detected in the method blank above MRL (PQL).

E Estimated; result based on response which exceeded the instrument calibration range.

The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed. N

D The reported result is from a dilution.

X See case narrative.

Page / of /

Water & Soil - Chain of Custody Record & Analytical Service Request

2655 Park Center Drive, Suite A Simi Valley, California 93065

Columbia Analytical

Phone (805) 526-7161 Fax (805) 526-7270

Zn Acetate Asc Acid からか Project Requirements (MRLs, QAPP) Preservative Key H2S04 NaOH HN03 Other Remarks Sanparin CAS Project No. N ന 4 4 6 5 CAS Contact: EDD required Yes/ No Type: (Tal hacken Time; Requested Turnaround Time in Business Days (Surcharges) please circle 1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) 10 Day - Standard Analysis Method and/or Analytes Preservative Code MRL required Yes V.No MDL / PQL / J required Yes No 0 \times 8270C □ (Subcontracted) 255 Semi-Volatile Organics GC/MS LbH EC □ 8012M (Subconfracted) TPH Diesel Low Level 8015B □ (Subcontracted) TPH Diesel 8015B

Cubcontracted) TPH Gas 8015B ☐ MTBE 8021B ☐ Received by: (Signature) Received by: (Signature) □ SS60B □ Oxygenates Number of Containers ATTN: GERALD TOMPHINS JR GIV, MON, 4008 Tier III - (Data Validation Package) 10% Surcharge Tier V - (client specified) 505 KING AVE. columbus, of 43201 P.O. # / Billing Information_ PAT 18/08 TIPS 30 Matrix 0609845 2 Project Number Project Name Sampler (Print & Sign) 9760 Collected 6874 4501 1254 153 Date Collected 11/12/08 80/91/11 3990 OLD TOWN NOE., C-205 Company Name & Address (Reporting Information) Laboratory ID Number 5AN DIEGO, CA 92110 (~) D(E Email Address for Result Reporting EN (a) Tier 1 - (Results/Default if not specified) DAVID CONNER Report Tier Levels - please select 80/81/11-91-83 MW-20-925 MW-20-4RS 325 An Employee - Owned Company 1184-726-7311 MW-70-275 MW-20- 175 Relinquish (Signature) Relinquished by: (Signature) Fier II - (Results + QC) BATTELLE Project Manager Client Sample ID MW-20 Phone

Cooler / Blank (Ice / No Ice

PANSA Time 405

SHULL BUR

Received by: (Signature)

Relinquished by: (Signature)

Temperature 3°C

DIVIDER SHEET

ANALYTICAL DATA FOR

Hexavalent Chromium

ANALYSIS

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:

Battelle

Service Request: P0803853

Project Name:

JPL Groundwater Monitoring 4Q08

Date Collected: 11/18/08

Date Received: 11/18/08

Project Number: G486090 Sample Matrix: WATER

Analysis Method: 7196A

Chromium, Hexavalent

Prep Method:

None

Units: mg/L (ppm)

Basis: NA

Test Notes:

Sample Name	Lab Code	PQL	MDL	Dilution Factor	Date Extracted	Date/Time Analyzed	Result	Result Notes
MW-20-5RS	P0803853-001	0.010	0.006	1	NA	11/18/08 16:20	ND	
MW-20-4RS	P0803853-002	0.010	0.006	1	NA	11/18/08 16:20	ND	
MW-20-3RS	P0803853-003	0.010	0.006	1	NA	11/18/08 16:20	ND	
MW-20-2RS	P0803853-004	0.010	0.006	1	NA	11/18/08 16:20	ND	
MW-20-1RS	P0803853-005	0.010	0.006	1	NA	11/18/08 16:20	ND	
EB-16-11/18/08	P0803853-006	0.010	0.006	1	NA	11/18/08 16:20	ND	
Method Blank	P0803853-MB	0.010	0.006	1	NA	11/18/08 16:20	ND	

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CAS SR #P0803815

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Heyayalent Chromium Raw Data		14-24



LABORATORY REPORT

December 2, 2008

David Conner Battelle 3990 Old Town Ave., Suite C-205 San Diego, CA 92110

RE: JPL Groundwater Monitoring 4Q08 / G486090

Dear David:

Enclosed are the results of the samples submitted to our laboratory on November 14, 2008. For your reference, these analyses have been assigned our service request number P0803815.

Columbia Analytical Services, Inc. is certified by the California Department of Health Services, NELAP Laboratory Certificate No. 02115CA; Arizona Department of Health Services, Certificate No. AZ0694; Florida Department of Health, NELAP Certification E871020; New Jersey Department of Environmental Protection, NELAP Laboratory Certification ID #CA009; New York State Department of Health, NELAP NY Lab ID No: 11221; Oregon Environmental Laboratory Accreditation Program, NELAP ID: CA20007; The American Industrial Hygiene Association, Laboratory #101661; Department of the Navy (NFESC); Pennsylvania Registration No. 68-03307; TX Commission of Environmental Quality, NELAP ID T104704413-08-TX. Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact me for information corresponding to a particular certification.

If you have any questions, please call me at (805) 526-7161.

Julesta

Respectfully submitted,

Columbia Analytical Services, Inc.

Sue Anderson Project Manager

> Page 1 of <u>24</u>

2655 Park Center Drive, Suite A

Simi Valley, California 93065

(805) 526-7161

(805) 526-7270 fax



Client:

Battelle

CAS Project No:

P0803815

Project:

JPL Groundwater Monitoring 4Q08 / G486090

CASE NARRATIVE

The samples were received intact under chain of custody on November 14, 2008 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

Hexavalent Chromium by EPA Method 7196A

No anomalies were encountered during this analysis.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for utilization of less than the complete report.

Client:

Battelle

Project:

JPL Groundwater Monitoring 4Q08/G486090

Service Request: P0803815

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	<u>DATE</u>	TIME
P0803815-001	MW-5	11/14/08	08:13
P0803815-002	MW-6	11/14/08	09:54

Columbia Analytical Services, Inc.

Acronyms

CA LUFT California DHS LUFT Method

ASTM American Society for Testing and Materials
BTEX Benzene/Toluene/Ethylbenzene/Xylenes
CAS Number Chemical Abstract Service Registry Number

CFC Chlorofluorocarbon

CRDL Contract Required Detection Limit
DLCS Duplicate Laboratory Control Sample

DMS Duplicate Matrix Spike
DOH or DHS Department of Health Services
EPA U.S. Environmental Protection Agency

GC Gas Chromatography

GC/MS Gas Chromatography/Mass Spectrometry

ICIon ChromatographyICBInitial Calibration BlankICVInitial Calibration VerificationLCSLaboratory Control SampleLUFTLeaking Underground Fuel Tank

MModified MethodMDLMethod Detection LimitMRLMethod Reporting Limit

MS Matrix Spike

MTBE Methyl tert -Butyl Ether
NA Not Applicable
NC Not Calculated

ND None Detected at or above the Method Reporting/Detection Limit (MRL/MDL)

NTU Nephelometric Turbidity Units

ppb Parts Per Billionppm Parts Per Million

PQL Practical Quantitation Limit
QA/QC Quality Assurance/Quality Control
RCRA Resource Conservation and Recovery Act

RPD Relative Percent Difference SIM Selected Ion Monitoring

SM Standard Methods for the Examination of Water and Wastewater, 19th Ed., 1995.
SW Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846,

Third Edition, 1986 and as amended by Updates I, II, IIA, and IIB.

TDS Total Dissolved Solids

TPH Total Petroleum Hydrocarbons
TSS Total Suspended Solids

TTLC Total Threshold Limit Concentration

VOA Volatile Organic Analyte(s)
VOC Volatile Organic Compound(s)

Qualifiers

U The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.

J The result is an estimated concentration that is less than the MRL (PQL), but greater than or equal to the MDL.

B Analyte detected in the method blank above MRL (PQL).

Estimated; result based on response which exceeded the instrument calibration range.

N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.

D The reported result is from a dilution.

X See case narrative.

Water & Soil - Chain of Custody Record & Analytical Service Request

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Columbia 2655 Park Ce Analytical Simi Valley, C

2655 Park Center Drive, Suite A Simi Valley, California 93065 Phone (805) 526-7161 Fax (805) 526-7270

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DIVIDER SHEET

ANALYTICAL DATA FOR

Hexavalent Chromium

ANALYSIS

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Battelle

Project Name: JPL Groundwater Monitoring 4Q08

Project Number: G486090 **Sample Matrix:** WATER

Service Request: P0803815

Date Collected: 11/14/08

Date Received: 11/14/08

Chromium, Hexavalent

Prep Method: None Units: mg/L (ppm)

Analysis Method: 7196A Basis: NA

Test Notes:

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Extracted	Date/Time Analyzed	Result	Result Notes
MW-5	P0803815-001	0.010	0.006	1	NA	11/14/08 16:15	ND	
MW-6	P0803815-002	0.010	0.006	1	NA	11/14/08 16:15	ND	
Method Blank	P0803815-MB	0.010	0.006	1	NA	11/14/08 16:15	ND	

Annroved By

Date:

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