LIMITED PHASE II ENVIRONMENTAL SOIL CHARACTERIZATION EVALUATION
APN 503-252-42-00, TROY STREET, LEMON GROVE
SAN DIEGO COUNTY, CALIFORNIA 91945
FOR VISTA AZUL, LLC
8109 SANTA LUZ VILLAGE GREEN SOUTH
SAN DIEGO, CALIFORNIA 92127

W.O. E6947.1-SC FEBRUARY 2, 2016



Geotechnical • Geologic • Coastal • Environmental

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February 2, 2016

W.O. E6947.1-SC

Vista Azul, LLC 8109 Santa Luz Village Green South San Diego, California 92127

Attention: Mr. Christopher Darhling

Subject: Limited Phase II Environmental Soil Characterization Evaluation, APN 503-252-42-00, Troy Street, Lemon Grove, San Diego County, California 91945

Dear Mr. Darhling:

GeoSoils, Inc. (GSI) is pleased to present the results of our Limited Phase II Environmental Soil Characterization Evaluation for the subject property in Lemon Grove, San Diego County, California. This study was conducted for the purpose of further assessing the property for the potential presence of organochlorine pesticides (OCPs) and lead-based paints (LBPs) in soil, per the requirements of the City of Lemon Grove Community Services Department (City of Lemon Grove, 2015 [see Appendix A]), owing to the previous historical use and presence of structures on the site. The scope of services for this evaluation included soil sampling and testing, analysis of test data, and the preparation of this summary report.

LIMITED SUPPLEMENTAL SOIL CHARACTERIZATION EVALUATION

As indicated in the Phase I Environmental Site Assessment (ESA) summary report prepared by GSI for the subject site (GSI, 2015b), OCPs from historical agricultural activities and LBPs from former onsite residential structures, thereon, have the potential to impact site soils. Thus, in order to evaluate the occurrence of these potential contaminants of concern, and to respond to City of Lemon Grove (2015), GSI conducted sampling and testing of the onsite soils.

Sampling was performed on January 13, 2016 by a representative of this office. Four (4) samples were collected at an approximate depth of ½ foot below existing grade (b.e.g.) with the assistance of hand-auger borings. The borings were advanced in areas of the site immediately underlain by the Tertiary Mission Valley Formation (i.e., existing natural areas), identified during our geotechnical evaluation of the site (GSI, 2015a). These areas were sampled instead of areas of the site we evaluated as being underlain by existing fill soils because fill placement typically involves the reworking and moisturizing of soils, and the

resultant dilution of any chemical compounds contained therein. Approximate sample locations are presented on Plate 1 which uses the "Preliminary Grading Plan" prepared by Landmark Consulting (2015) as a base.

GSI selected four locations within native material identified during our geotechnical investigation (GSI, 2015a). The approximate locations of the soil borings are illustrated on Plate 1. Soil samples were collected using a hand auger between approximate depths of 0.5 and 2 feet below ground surface (bgs) in soil borings HA-1 and HA-3, and between approximate depths of 0.5 and 1 foot in soil borings HA-2 and HA-4. Refusal was met at a depth of approximately 1 foot bgs in soil borings HA-2 and HA-4.

Soil samples were placed in 4-ounce glass containers and stored on ice pending delivery to EurofinsCalscience in Garden Grove, California under chain-of-custody protocol. Testing was performed to evaluate the presence of OCPs and lead in the samples in general accordance with EPA 8081B and 6010B, respectively. Sample digestion for lead testing was performed in accordance with EPA 3050B.

Results

The test results indicate non-detectable concentrations of OCPs in the collected samples. Lead concentrations in the tested samples ranged between 1.41 milligrams/kilogram (mg/kg) and 8.57 mg/kg. These concentrations were compared to California Human Health Screening Levels for residential applications (CHHSLs-R). CHHSLs were published by the California Environmental Protection Agency ([CEPA], 2005) and represent threshold values with generally accepted exposure factors to estimate concentrations in residential soil that do not represent a cancer risk to humans greater than one-in-one million (i.e., 1 x 10⁻⁶). The CHHSLs-R for lead concentrations in soil is 80 mg/kg. Thus, the concentrations of lead in the tested samples are approximately an order of magnitude less than CHHSLs-R. Testing results are presented in Appendix B.

CONCLUSIONS

Based on the results of the aforementioned testing, OCPs and lead in the onsite soil are not considered a recognized environmental condition. GSI recommends no further action at this time. Unless specifically superceded herein, the conclusions and recommendations contained in GSI (2015b) are still considered valid and applicable, and should be appropriately implemented during the balance of site development.

LIMITATIONS

GSI has performed the services for this project in accordance with the terms of a contract between GSI and Client and in accordance with current professional standards for investigations of this type. The conclusions presented in this report are based on the information collected during the study, the present understanding of the site conditions, and professional judgment.

Please note, subsurface and hazardous waste/toxic substance conditions may vary from those provided in historical documents reviewed by GSI. The interpretations and recommendations of GSI are based solely on such information, and/or information supplied by Client. Findings of this investigation based on data provided by others carries no warranty, express or implied, as a result of the usage of such data.

It is possible that future investigations may reveal additional data or variations of the current data which may require the current conclusions and recommendations to be reevaluated. As a result, GSI makes no warranty, either express or implied, as to its findings, opinions, recommendations, specifications, or professional advice except that they were promulgated after being prepared in accordance with generally accepted standards of care and diligence normally practiced by recognized consulting firms performing services of a similar nature.

The information in this report is relevant to the date of the site work and should not be relied on to represent conditions at any later date. Facts, conditions, and acceptable risk factors change with time, accordingly, this report should be viewed within this context.

CLOSURE

We appreciate the opportunity to be of service to you. If you have any questions pertaining to this report or any other matter, please do not hesitate to call us at (760) 438-3155.

Respectfully submitted,

GeoSoils, Inc.

Rýan B. Boehmer Project Geologist

SSIONAL 1340 Certified Engineering Geologist FOF CALIFOR John P. Franklin

Registered Environmental Property Assessor, NREP 461992, CEG 1340

RBB/JPF/jh

Attachments:

Appendix A - References Appendix B - Laboratory Analytical Results Plate 1 - Site Map

Distribution:

(3) Addressee

Vista Azul, LLC Troy Street, Lemon Grove File:e:\wp12\env\e6900\e6947.1.lp2

APPENDIX A

REFERENCES

APPENDIX A

REFERENCES

- California Environmental Protection Agency, 2005, Use of California human screening levels (CHHSLs) in evaluation of contaminated properties, office of environmental health hazzard assessment, dated January, updated through September 2009.
- City of Lemon Grove Community Services Department, 2015, Review memorandum, TM0-000-0062, PDP-150-0003, GPA-150-0003, ZA1-500-0004 on Palm Street and Camino De Las Palmas (22 dwelling unit request), dated November 4.
- GeoSoils, Inc., 2015a, Geotechnical evaluation for the Vista Azul residential development, Parcel 150-0003, Troy Street, City of Lemon Grove, California, W.O. 6947-A-SC, dated October 2.
- _____, 2015b, Phase I environmental site assessment, APN 503-252-42-00, Troy Street, Lemon Grove, San Diego County, California 91945, W.O. E6947-SC, dated September 30. Geotechnical evaluation for the Vista Azul residential development, Parcel 150-0003, Troy Street, City of Lemon Grove, California, W.O. E6947-SC, dated September 30.
- Landmark Consulting, 2015, Preliminary grading plan, Vista Azul, Troy Street, Lemon Grove, CA 91945, 1 sheet, 30-scale, plot dated September 10.

APPENDIX B

LABORATORY ANALYTICAL RESULTS

WORK ORDER NUMBER: 16-01-0951

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AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For Client: GeoSoils, Inc. Client Project Name: Rina Attention: John Franklin 5741 Palmer Way Carlsbad, CA 92010-7248

Approved for release on 01/22/2016 by: Terri Chang Project Manager



ResultLink ▶

Email your PM >

Eurofins Calscience, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.

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Work Order: 16-01-0951

Page 1 of 1

Condition Upon Receipt:

Samples were received under Chain-of-Custody (COC) on 01/14/16. They were assigned to Work Order 16-01-0951.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

Additional Comments:

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

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Client:	GeoSoils, Inc.	Work Order:	16-01-0951
	5741 Palmer Way	Project Name:	Rina
	Carlsbad, CA 92010-7248	PO Number:	
		Date/Time Received:	01/14/16 19:20
		Number of Containers:	10
Δttn·	John Franklin		

Sample Summary

Attn: John Franklin

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
HA-1-0.5	16-01-0951-1	01/13/16 12:40	1	Solid
HA-1-1	16-01-0951-2	01/13/16 12:46	1	Solid
HA-1-2	16-01-0951-3	01/13/16 12:55	1	Solid
HA-2-0.5	16-01-0951-4	01/13/16 13:13	1	Solid
HA-2-1	16-01-0951-5	01/13/16 13:22	1	Solid
HA-3-0.5	16-01-0951-6	01/13/16 14:28	1	Solid
HA-3-1	16-01-0951-7	01/13/16 14:32	1	Solid
HA-3-2	16-01-0951-8	01/13/16 14:37	1	Solid
HA-4-0.5	16-01-0951-9	01/13/16 14:54	1	Solid
HA-4-1	16-01-0951-10	01/13/16 15:01	1	Solid





GeoSoils, Inc.			Date Re	ceived:			01/14/16	
5741 Palmer Way			Work Or	rder:		16-01-0951		
Carlsbad, CA 92010-7248			Prepara	tion:			EPA 3050B	
			Method:				EPA 6010B	
			Units:				mg/kg	
Project: Rina						Pa	ge 1 of 1	
Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID	
HA-1-0.5	16-01-0951-1-A	01/13/16 12:40	Solid	ICP 7300	01/15/16	01/18/16 19:51	160115L02	
Parameter		Result		RL	DF	Qua	lifiers	
Lead		1.41		0.524	1.05			
HA-2-0.5	16-01-0951-4-A	01/13/16 13:13	Solid	ICP 7300	01/15/16	01/18/16 19:52	160115L02	
Parameter	·	Result		RL	DF	Qua	lifiers	
Lead		6.55		0.485	0.971			
HA-3-0.5	16-01-0951-6-A	01/13/16 14:28	Solid	ICP 7300	01/15/16	01/18/16 19:54	160115L02	
Parameter		Result		<u>RL</u>	DF	Qua	lifiers	
Lead		8.57		0.521	1.04			
HA-4-0.5	16-01-0951-9-A	01/13/16 14:54	Solid	ICP 7300	01/15/16	01/18/16 19:55	160115L02	
Parameter		Result		RL	DF	Qua	lifiers	
Lead		3.65		0.476	0.952			
Method Blank	097-01-002-22251	N/A	Solid	ICP 7300	01/15/16	01/18/16 12:23	160115L02	
Parameter		Result		RL	DF	Qua	lifiers	
Lead		ND		0.495	0.990			



Analytical Report

GeoSoils, Inc.			Date Rece	eived:			01/14/16	
5741 Palmer Way			Work Ord	er:			16-01-0951	
Carlsbad, CA 92010-7248			Preparatio	on:		EPA 3545		
			Method:			EPA 8081A		
			Units:				ug/kg	
Project: Rina						Ра	ige 1 of 5	
Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID	
HA-1-0.5	16-01-0951-1-A	01/13/16 12:40	Solid	GC 41	01/15/16	01/18/16 12:22	160115L04	
Parameter		Result	<u>F</u>	<u>RL</u>	DF	Qua	alifiers	
Aldrin		ND	5	.0	1.00			
Alpha-BHC		ND	1	0	1.00			
Beta-BHC		ND	5	.0	1.00			
Chlordane		ND	5	0	1.00			
4,4'-DDD		ND	5	.0	1.00			

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
HA-1-0.5	16-01-0951-1-A	01/13/16 12:40	Solid	GC 41	01/15/16	01/18/16 12:22	160115L04
Parameter		<u>Result</u>	R	<u>L</u>	DF	Qualif	iers
Aldrin		ND	5	.0	1.00		
Alpha-BHC		ND	1	0	1.00		
Beta-BHC		ND	5	.0	1.00		
Chlordane		ND	5	0	1.00		
4,4'-DDD		ND	5	.0	1.00		
4,4'-DDE		ND	5	.0	1.00		
4,4'-DDT		ND	5	.0	1.00		
Delta-BHC		ND	1	0	1.00		
Dieldrin		ND	5	.0	1.00		
Endosulfan I		ND	5	.0	1.00		
Endosulfan II		ND	5	.0	1.00		
Endosulfan Sulfate		ND	5	.0	1.00		
Endrin		ND	5	.0	1.00		
Endrin Aldehyde		ND	5	.0	1.00		
Endrin Ketone		ND	5	.0	1.00		
Gamma-BHC		ND	5	.0	1.00		
Heptachlor		ND	5	.0	1.00		
Heptachlor Epoxide		ND	1	0	1.00		
Methoxychlor		ND	5	.0	1.00		
Toxaphene		ND	1	00	1.00		
Surrogate		<u>Rec. (%)</u>	<u>C</u>	ontrol Limits	<u>Qualifiers</u>		
Decachlorobiphenyl		86	2	4-168			
2,4,5,6-Tetrachloro-m-Xylene		89	2	5-145			

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



01/14/16 16-01-0951

EPA 3545

ug/kg

EPA 8081A

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Analytical Report

GeoSoils, Inc.			Date Rec	eived:	
5741 Palmer Way	r Way Work Order:				
Carlsbad, CA 92010-7248	48 Preparation:				
			Method:		
			Units:		
Project: Rina					
Client Sample Number	Lab Sample	Date/Time	Matrix	Instrument	Date

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
HA-2-0.5	16-01-0951-4-A	01/13/16 13:13	Solid	GC 41	01/15/16	01/18/16 12:37	160115L04
Parameter		<u>Result</u>	<u>RI</u>	=	DF	Quali	fiers
Aldrin		ND	5.0	D	1.00		
Alpha-BHC		ND	9.9	9	1.00		
Beta-BHC		ND	5.0	D	1.00		
Chlordane		ND	50)	1.00		
4,4'-DDD		ND	5.0	D	1.00		
4,4'-DDE		ND	5.0	0	1.00		
4,4'-DDT		ND	5.0	D	1.00		
Delta-BHC		ND	9.9	9	1.00		
Dieldrin		ND	5.0	0	1.00		
Endosulfan I		ND	5.0	D	1.00		
Endosulfan II		ND	5.0	0	1.00		
Endosulfan Sulfate		ND	5.0	0	1.00		
Endrin		ND	5.0	D	1.00		
Endrin Aldehyde		ND	5.0	D	1.00		
Endrin Ketone		ND	5.0	0	1.00		
Gamma-BHC		ND	5.0	0	1.00		
Heptachlor		ND	5.0	0	1.00		
Heptachlor Epoxide		ND	9.9	9	1.00		
Methoxychlor		ND	5.0	D	1.00		
Toxaphene		ND	99)	1.00		
Surrogate		<u>Rec. (%)</u>	<u>Cc</u>	ontrol Limits	Qualifiers		
Decachlorobiphenyl		78	24	-168			
2,4,5,6-Tetrachloro-m-Xylene		83	25	-145			

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Analytical Report

GeoSoils, Inc.		Date Rece	eived:		01/14/16			
5741 Palmer Way			Work Orde	er:			16-01-0951	
Carlsbad, CA 92010-7248			Preparatio	on:		EPA 3545		
			Method:			EPA 8081A		
			Units:				ug/kg	
Project: Rina						Pa	ige 3 of 5	
Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID	
HA-3-0.5	16-01-0951-6-A	01/13/16 14:28	Solid	GC 41	01/15/16	01/18/16 12:52	160115L04	
Parameter		Result	Ē	<u>RL</u>	DF	Qua	alifiers	
Aldrin		ND	5	.0	1.00			
Alpha-BHC		ND	1	0	1.00			
Beta-BHC		ND	5	.0	1.00			

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
HA-3-0.5	16-01-0951-6-A	01/13/16 14:28	Solid	GC 41	01/15/16	01/18/16 12:52	160115L04
Parameter		<u>Result</u>	RL		DF	Qua	lifiers
Aldrin		ND	5.0		1.00		
Alpha-BHC		ND	10		1.00		
Beta-BHC		ND	5.0		1.00		
Chlordane		ND	50		1.00		
4,4'-DDD		ND	5.0		1.00		
4,4'-DDE		ND	5.0		1.00		
4,4'-DDT		ND	5.0		1.00		
Delta-BHC		ND	10		1.00		
Dieldrin		ND	5.0		1.00		
Endosulfan I		ND	5.0		1.00		
Endosulfan II		ND	5.0		1.00		
Endosulfan Sulfate		ND	5.0		1.00		
Endrin		ND	5.0		1.00		
Endrin Aldehyde		ND	5.0		1.00		
Endrin Ketone		ND	5.0		1.00		
Gamma-BHC		ND	5.0		1.00		
Heptachlor		ND	5.0		1.00		
Heptachlor Epoxide		ND	10		1.00		
Methoxychlor		ND	5.0		1.00		
Toxaphene		ND	100	0	1.00		
Surrogate		<u>Rec. (%)</u>	Co	ntrol Limits	<u>Qualifiers</u>		
Decachlorobiphenyl		67	24-	168			
2,4,5,6-Tetrachloro-m-Xylene		66	25-	145			

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Analytical Report

GeoSoils, Inc.	
5741 Palmer Way	

Carlsbad, CA 92010-7248

Date Received:	01/14/16
Work Order:	16-01-0951
Preparation:	EPA 3545
Method:	EPA 8081A
Units:	ug/kg
	Page 4 of 5

Project: Rina

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
HA-4-0.5	16-01-0951-9-A	01/13/16 14:54	Solid	GC 41	01/15/16	01/18/16 13:07	160115L04
Parameter		<u>Result</u>		RL	DF	Qualif	fiers
Aldrin		ND	4	5.0	1.00		
Alpha-BHC		ND	9	9.9	1.00		
Beta-BHC		ND	:	5.0	1.00		
Chlordane		ND	:	50	1.00		
4,4'-DDD		ND	:	5.0	1.00		
4,4'-DDE		ND	:	5.0	1.00		
4,4'-DDT		ND	:	5.0	1.00		
Delta-BHC		ND	:	9.9	1.00		
Dieldrin		ND	:	5.0	1.00		
Endosulfan I		ND	:	5.0	1.00		
Endosulfan II		ND	:	5.0	1.00		
Endosulfan Sulfate		ND	:	5.0	1.00		
Endrin		ND	:	5.0	1.00		
Endrin Aldehyde		ND	:	5.0	1.00		
Endrin Ketone		ND	:	5.0	1.00		
Gamma-BHC		ND	:	5.0	1.00		
Heptachlor		ND	4	5.0	1.00		
Heptachlor Epoxide		ND	9	9.9	1.00		
Methoxychlor		ND	4	5.0	1.00		
Toxaphene		ND	9	99	1.00		
Surrogate		<u>Rec. (%)</u>	9	Control Limits	<u>Qualifiers</u>		
Decachlorobiphenyl		79	:	24-168			
2,4,5,6-Tetrachloro-m-Xylene		78	:	25-145			

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



GeoSoils, Inc.			Date Rece	eived:			01/14/16
5741 Palmer Way			Work Ord	er:			16-01-0951
Carlsbad, CA 92010-7248			Preparatio	on:			EPA 3545
			Method:				EPA 8081A
			Units:				ug/ka
Project: Rina						Pa	ige 5 of 5
Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-12-537-2333	N/A	Solid	GC 41	01/15/16	01/18/16 11:37	160115L04
Parameter		Result	Ē	<u>RL</u>	DE	Qua	alifiers
Aldrin		ND	5	5.0	1.00		
Alpha-BHC		ND	1	0	1.00		
Beta-BHC		ND	5	5.0	1.00		
Chlordane		ND	5	60	1.00		
4,4'-DDD		ND	5	5.0	1.00		
4,4'-DDE		ND	5	5.0	1.00		
4,4'-DDT		ND	5	5.0	1.00		
Delta-BHC		ND	1	0	1.00		
Dieldrin		ND	5	5.0	1.00		
Endosulfan I		ND	5	5.0	1.00		
Endosulfan II		ND	5	5.0	1.00		
Endosulfan Sulfate		ND	5	5.0	1.00		
Endrin		ND	5	5.0	1.00		
Endrin Aldehyde		ND	5	5.0	1.00		
Endrin Ketone		ND	5	5.0	1.00		
Gamma-BHC		ND	5	5.0	1.00		
Heptachlor		ND	5	5.0	1.00		
Heptachlor Epoxide		ND	1	0	1.00		
Methoxychlor		ND	5	5.0	1.00		
Toxaphene		ND	1	00	1.00		
Surrogate		<u>Rec. (%)</u>	<u>C</u>	Control Limits	<u>Qualifiers</u>		
Decachlorobiphenyl		103	2	4-168			
2,4,5,6-Tetrachloro-m-Xylene		101	2	25-145			

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Quality Control - Spike/Spike Duplicate

GeoSoils, Inc.				Date	Received:					01/14/16
5741 Palmer Way				Work	Order:				1	6-01-0951
Carlsbad, CA 92010-7248				Prepa	aration:				E	PA 3050B
				Metho	od:				E	PA 6010B
Project: Rina									Page 1	of 2
Quality Control Sample ID	Туре		Matrix	Ins	strument	Date Prepared	Date Ana	lyzed	MS/MSD Ba	tch Number
16-01-0852-28	Sample		Solid	ICI	P 7300	01/15/16	01/18/16	12:39	160115S02	
16-01-0852-28	Matrix Spike		Solid	ICI	P 7300	01/15/16	01/18/16	1 2:40	160115S02	
16-01-0852-28	Matrix Spike	Duplicate	Solid	ICI	P 7300	01/15/16	01/18/16	12:42	160115S02	
<u>Parameter</u>	<u>Sample</u> Conc.	<u>Spike</u> Added	MS Conc.	<u>MS</u> %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	<u>RPD</u>	RPD CL	Qualifiers
Lead	9.187	25.00	36.71	110	32.74	94	75-125	11	0-20	

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RPD: Relative Percent Difference. CL: Control Limits

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GeoSoils, Inc.	Date Received:	01/14/16
5741 Palmer Way	Work Order:	16-01-0951
Carlsbad, CA 92010-7248	Preparation:	EPA 3545
	Method:	EPA 8081A
Project: Rina		Page 2 of 2

Quality Control Sample ID	Туре		Matrix	Instru	ment	Date Prepared	Date Anal	yzed N	MS/MSD Bat	ch Number
HA-1-0.5	Sample		Solid	GC 41	1	01/15/16	01/18/16 ⁻	12:22 1	60115S04	
HA-1-0.5	Matrix Spike		Solid	GC 41	1	01/15/16	01/18/16 ⁻	11:52 1	60115S04	
HA-1-0.5	Matrix Spike I	Duplicate	Solid	GC 41	1	01/15/16	01/18/16 ⁻	12:07 1	60115S04	
Parameter	<u>Sample</u> <u>Conc.</u>	<u>Spike</u> Added	<u>MS</u> Conc.	<u>MS</u> %Rec.	<u>MSD</u> Conc.	<u>MSD</u> %Rec.	<u>%Rec. CL</u>	<u>RPD</u>	<u>RPD CL</u>	Qualifiers
Aldrin	ND	25.00	21.57	86	22.76	91	50-135	5	0-25	
Alpha-BHC	ND	25.00	19.77	79	20.95	84	50-135	6	0-25	
Beta-BHC	ND	25.00	20.49	82	21.31	85	50-135	4	0-25	
4,4'-DDD	ND	25.00	22.10	88	23.86	95	50-135	8	0-25	
4,4'-DDE	ND	25.00	23.91	96	24.77	99	50-135	4	0-25	
4,4'-DDT	ND	25.00	22.77	91	23.85	95	50-135	5	0-25	
Delta-BHC	ND	25.00	21.27	85	22.17	89	50-135	4	0-25	
Dieldrin	ND	25.00	21.07	84	21.53	86	50-135	2	0-25	
Endosulfan I	ND	25.00	20.37	81	21.13	85	50-135	4	0-25	
Endosulfan II	ND	25.00	20.23	81	21.45	86	50-135	6	0-25	
Endosulfan Sulfate	ND	25.00	21.35	85	22.40	90	50-135	5	0-25	
Endrin	ND	25.00	25.95	104	27.30	109	50-135	5	0-25	
Endrin Aldehyde	ND	25.00	17.48	70	15.22	61	50-135	14	0-25	
Gamma-BHC	ND	25.00	21.43	86	22.44	90	50-135	5	0-25	
Heptachlor	ND	25.00	22.60	90	23.94	96	50-135	6	0-25	
Heptachlor Epoxide	ND	25.00	18.00	72	18.96	76	50-135	5	0-25	
Methoxychlor	ND	25.00	23.60	94	26.18	105	50-135	10	0-25	

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Lead

RPD: Relative Percent Difference.

CL: Control Limits

7440 Lincoln Way, Garden Grove, CA 92841-1427 • TEL: (714) 895-5494 • FAX: (714) 894-7501

GeoSoils, Inc.			Date Receive	ed:		01/14/16
5741 Palmer Way			Work Order:			16-01-0951
Carlsbad, CA 92010-7248			Preparation:			EPA 3050B
			Method:			EPA 6010B
Project: Rina						Page 1 of 2
Quality Control Sample ID	Туре	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
097-01-002-22251	LCS	Solid	ICP 7300	01/15/16	01/18/16 12:28	160115L02
Parameter		Spike Added	Conc. Recove	red ICS %Re	ec. %Rec.	Cl Qualifiers

25.43

102

80-120

25.00



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GeoSoils, Inc.	Date Received:	01/14/16
5741 Palmer Way	Work Order:	16-01-0951
Carlsbad, CA 92010-7248	Preparation:	EPA 3545
	Method:	EPA 8081A
Project: Rina		Page 2 of 2

Quality Control Sample ID	Туре	Matrix	Instrument	Date Prepa	red Date Analyz	ed LCS Batch N	umber
099-12-537-2333	LCS	Solid	GC 41	01/15/16	01/18/16 13	:37 160115L04	
Parameter	S	pike Added	Conc. Recovered	LCS %Rec.	<u>%Rec. CL</u>	ME CL	<u>Qualifiers</u>
Aldrin	25	5.00	20.73	83	50-135	36-149	
Alpha-BHC	25	5.00	20.20	81	50-135	36-149	
Beta-BHC	25	5.00	20.83	83	50-135	36-149	
4,4'-DDD	25	5.00	27.48	110	50-135	36-149	
4,4'-DDE	25	5.00	22.64	91	50-135	36-149	
4,4'-DDT	25	5.00	29.90	120	50-135	36-149	
Delta-BHC	25	5.00	21.43	86	50-135	36-149	
Dieldrin	25	5.00	19.74	79	50-135	36-149	
Endosulfan I	25	5.00	19.65	79	50-135	36-149	
Endosulfan II	25	5.00	22.36	89	50-135	36-149	
Endosulfan Sulfate	25	5.00	32.57	130	50-135	36-149	
Endrin	25	5.00	27.57	110	50-135	36-149	
Endrin Aldehyde	25	5.00	15.07	60	50-135	36-149	
Gamma-BHC	25	5.00	21.54	86	50-135	36-149	
Heptachlor	25	5.00	22.60	90	50-135	36-149	
Heptachlor Epoxide	25	5.00	19.08	76	50-135	36-149	
Methoxychlor	25	5.00	35.56	142	50-135	36-149	ME

Total number of LCS compounds: 17 Total number of ME compounds: 1 Total number of ME compounds allowed: 1 LCS ME CL validation result: Pass

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Calscience

Work Order: 16-01-0951				Page 1 of 1
Method	Extraction	Chemist ID	Instrument	Analytical Location
EPA 6010B	EPA 3050B	935	ICP 7300	1
EPA 8081A	EPA 3545	669	GC 41	1

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Location 1: 7440 Lincoln Way, Garden Grove, CA 92841



Calscience

Work Order: 16-01-0951

Glossary of Terms and Qualifiers

Vork Order:	16-01-0951	Page 1 of 1
<u>Qualifiers</u>	Definition	
*	See applicable analysis comment.	
<	Less than the indicated value.	
>	Greater than the indicated value.	
1	Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample dat clarification.	a was reported without further
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank sur in control and, therefore, the sample data was reported without further clarification.	rogate spike compound was
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspen associated LCS recovery was in control.	ected matrix interference. The
4	The MS/MSD RPD was out of control due to suspected matrix interference.	
5	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matr	ix interference.
6	Surrogate recovery below the acceptance limit.	
7	Surrogate recovery above the acceptance limit.	
В	Analyte was present in the associated method blank.	
BU	Sample analyzed after holding time expired.	
BV	Sample received after holding time expired.	
CI	See case narrative.	
E	Concentration exceeds the calibration range.	
ET	Sample was extracted past end of recommended max. holding time.	
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.	
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard to were also present (or detected).	out heavier hydrocarbons
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard to also present (or detected).	out lighter hydrocarbons were
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection li estimated.	mit. Reported value is
JA	Analyte positively identified but quantitation is an estimate.	
ME	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).	
ND	Parameter not detected at the indicated reporting limit.	
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample e concentration by a factor of four or greater.	xceeding the spike
SG	The sample extract was subjected to Silica Gel treatment prior to analysis.	
Х	% Recovery and/or RPD out-of-range.	
Z	Analyte presence was not confirmed by second column or GC/MS analysis.	
	Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % more reported on a wet weight basis.	bisture. All QC results are
	Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holdi (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as bein stated holding time unless received at the laboratory within 15 minutes of the collection time.	ng time of <= 15 minutes g received outside of the

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

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seurofins work order NUMB	Pa E R: 16-0	ge 18 of 1 – _	18 351						
Calscience SAMPLE RECEIPT CHECKLIST	COOLER	COOLER <u>\</u> OF <u>\</u>							
CLIENT: GEOSOILS INC	DATE: 01	1141	2016						
TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue) Thermometer ID: SC4B (CF: +0.3°C); Temperature (w/o CF):°C (w/ CF): Sample(s) outside temperature criteria (PM/APM contacted by:) Sample(s) outside temperature criteria but received on ice/chilled on same day of samplir Sample(s) received at ambient temperature; placed on ice for transport by courier Ambient Temperature:Air	_°C; ┏ Blank ng Check	 □ San ed by: <u>(</u> 	nple						
CUSTODY SEAL: Cooler □ Present and Intact □ Present but Not Intact □ N/A Sample(s) □ Present and Intact □ Present but Not Intact □ N/A	Check Check	ed by: _ (ed by: _6	571 81						
SAMPLE CONDITION:	Yes	No	N/A						
Chain-of-Custody (COC) document(s) received with samples	🗹								
COC document(s) received complete	🗹								
□ Sampling date □ Sampling time □ Matrix □ Number of containers									
🗆 No analysis requested 🖾 Not relinquished 🖾 No relinquished date 🖾 No relinquished	time		1						
Sampler's name indicated on COC	Ø								
Sample container label(s) consistent with COC	🗹								
Sample container(s) intact and in good condition	Ø								
Proper containers for analyses requested	🗹								
Sufficient volume/mass for analyses requested	🗹								
Samples received within holding time									
Aqueous samples for certain analyses received within 15-minute holding time	r -								
□ pH □ Residual Chlorine □ Dissolved Sulfide □ Dissolved Oxygen			Ø						
Proper preservation chemical(s) noted on COC and/or sample container									
Unpreserved aqueous sample(s) received for certain analyses			- 19 A						
Container(s) for certain analysis free of headspace			Ø						
□ Volatile Organics □ Dissolved Gases (RSK-175) □ Dissolved Oxygen (SM 4500)			<i>,</i>						
\Box Carbon Dioxide (SM 4500) \Box Ferrous Iron (SM 3500) \Box Hydrogen Sulfide (Hach)									
Tedlar TM hag(s) free of condensation			Ø						
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Aqueous: \Box VOA \Box VOA \Box VOA a_2 \Box 100PJ \Box 100PJ a_2 \Box 125AGB									
	с, соб 🖬 000]							
Solid: \square 407CG. \square 807CG. \square 1607CG. \square Sleeve () \square EnCores [®] () \square TerraCo	ores [®] (
Air: □ Tedlar™ □ Canister □ Sorbent Tube □ PUF □ Other Matrix (): 🗆								
Container: $\mathbf{A} = \text{Ambar } \mathbf{P} = \text{Pattle } \mathbf{C} = \text{Class } \mathbf{F} = \text{Envalues } \mathbf{C} = \text{Class } \mathbf{I} = \text{Ior } \mathbf{P} = \text{Plastic and } \mathbf{Z} = \text{Tiple}$	 c/Resealable i	— Bag							
Container, A – Amber, D – Bollie, C – Clear, E – Envelope, G – Glass, J – Jar, F – Flastic, and Z – Zipic Dreasniptive: $h = huffered$ f = filtered $h = HOL = - HOC = na - NaOH = NaOH = NaOA = NaOA = HaDO.$	abeled/Check	$ed bv \in \mathbf{E}$	581						
$Freservative: \mathbf{p} = \text{puttereu}, \mathbf{r} = \text{miceu}, \mathbf{n} = \text{mic}, \mathbf{n} = \text{miv}_3, \mathbf{n} = \text{mac}_1, \mathbf{n}_2 = \text{mac}_3, \mathbf{p} = \text{mac}_4, \cdots$	Review	/ed by: 1	017						
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