GEO ENVIRON
GEOTECHNICAL AND ENVIRONMENTAL ENGINEERING CONSULTANTS, INC.
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Job No. 21-215H.3
June 15, 2021

Mr. Joseph Karaki
Western State Eng. & Construction, Inc.
4887 E. La Palma Street, Ste # 707
Anaheim, Ca 92807

Subject: **Supplemental Environmental Site Assessment, Vacant Property, 28771 Central Ave, Lake Elsinore, RSCO, California**

Reference:

1) Geo Environ, 12/28/20, "Phase I Report, Vacant Property, 28771 Central Ave, Lake Elsinore, RSCO, California
2) Geo Environ, 5/15/21, "Phase 2 Report, Vacant Property, 28771 Central Ave, Lake Elsinore, RSCO, California

Gentlemen:

In accordance with your request, we have performed a supplemental environmental site assessment on the subject site. The objective of this assessment is to address and discuss the findings of the lab results for the soil sampling that was done at the site.

BACKGROUND HISTORY

The subject property is a vacant land that is 1.12 acres in size, located on the north west corner of Central Ave (74 Hwy) & Ardenwood Way, Lake Elsinore, California. Surrounding the site is vacant land, commercial building, and multi-family buildings.

The site is underlain with 1.5 feet of top soil consisting of a medium brown, silty sand. Below the top soil, a weathered bedrock was encountered.

A phase I Environmental Site Assessment for the subject property was completed on December 28, 2020. The assessment was performed at the request of Karaki Western States. The subject property was evaluated for indications of environmental management activities, and the possible presence of hazardous substances that may have been manufactured, stored, used, or disposed on and/ or near the subject property. The subject property visit was conducted by Mr. Fahad Masud on December 28, 2020.

A phase 2 Environmental Site Assessment for the subject property was completed on May 15, 2021. The Trench pits were excavated to a maximum depth of 5 feet from the existing grade. The soil excavations were accomplished with a backhoe. Upon reaching each sampling interval, soil samples were collected using glass jars.

Field screening of soil samples for petroleum hydrocarbon contamination at periodic intervals during field operations using a photoionization detector (PID) or organic vapor analyzer (OVA)
Initial lab testing was conducted on 5/6/21 & 5/12/21. In the initial testing for the sampling done for TP-2, Arsenic was detected at 21.0, 10.8 and 22.5 mg/kg. Two samples being above the accepted background concentration of 12 mg/kg. The laboratory recommended additional analysis, STLC, for Arsenic, Barium, Copper, Lead, Nickel, Chromium and Vanadium. Additional analyses were performed, as per the lab, to further investigate the potential for exposure of these metals.

During our review of aerial photographs obtained for the nature of the Phase 1 assessment, structures can be seen on the subject property dated back to 2006. Those structures have currently been demolished, but information regarding the nature of the business that may have transpired at the property are unknown. Additional analysis, STLC were conduced on June 12, 2021, and Laboratory results are attached herein.

RESULTS

Element Analyzed	Sample Result	PQL	DF	TTLC Limit	STLC Limit	EPA Method Used
Arsenic	0.133	0.05	1	500	5.0	6010B
Barium	8.30	0.5	1	10,000	100	6010B
Chromium	ND	0.05	1	2,500	650/5.0@	6010B
Copper	0.146	0.1	1	2,500	25	6010B
Lead	0.057	0.05	1	1,000	5.0	6010B
Nickel	0.538	0.25	1	2,000	20	6010B
Vanadium	0.440	0.5	1	2,400	24	6010B

DISCUSSION OF RESULTS & POTENTIAL SOURCES

During the initial testing, the discovery of levels of arsenic led to additional analysis, STLC. The STLC analysis is conducted by extracting the sample and using a 10:1 ratio of citric acid solution to sample. This procedure is also used to simulate a landfill environment and to determine how much of a regulated compound will leach out into the environment. The citric acid extraction solution used for the STLC extraction is much more aggressive than the acetic acid extraction solution used for TCLP. This extraction is used to determine whether certain leachable compounds are present in large enough amounts in a given material that the material need to be dealt with as hazardous waste. During our STLC analysis, it was determined that all elements analyzed, including Arsenic, were found to be considerable lower than the STLC limit. In regards to arsenic, the sample result found 0.1333 mg/L whereas the STLC limit is 5.0 mg/L.

During our phase 1 investigation, our findings found a residential structure had existed on the subject property but was demolished. It is our belief, that the arsenic detected is naturally occurring due to the low levels found in both of our analysis. In the initial testing for the sampling done for TP-2, Arsenic was detected at 21.0, 10.8 and 22.5 mg/kg (or 21.0 ug/g, 10.8 ug/g, 22.5ug/g). Arsenic is widely distributed in the Earth's crust, which contains about 3.4 ppm arsenic (Wedepohl 1991). It is mostly found in nature minerals, such as realgar (As4S4), orpiment (As2S3), and arsenolite (As2O3), and only

found in its elemental form to a small extent. There are over 150 arsenic-bearing minerals (Budavari et al. 2001; Carapella 1992). Arsenic concentrations in soils from various countries can range from 0.1 to 50 µg/g and can vary widely among geographic regions. Typical arsenic concentrations for uncontaminated soils range from 1 to 40 µg/g, with the lowest concentrations in sandy soils and soils derived from granites. Higher arsenic concentrations are found in alluvial soils and soils with high organic content (Mandal and Suzuki 2002). Arsenic in soil may originate from the parent materials that form the soil, industrial wastes, or use of arsenical pesticides. Geological processes that may lead to high arsenic concentrations in rock and subsequently the surrounding soil include hydrothermic activity and pegmatite formation (Peters et al. 1999). In the first case, thermal activity results in the dissolution and transport of metals, including the metalloid arsenic, which are precipitated in fractures in rocks. In the second process, cooling magmas may concentrate metals that are injected into rocks, crystallizing as pegmatites. Areas of volcanic activity include large areas of California, Hawaii, Alaska, Iceland, and New Zealand.

The U.S. Geological Survey reports the mean and range of arsenic in soil and other surficial materials as 7.2 and <0.1–97 µg/g, respectively (USGS 1984). It is assumed that the arsenic encountered is naturally occluding as arsenic is known to be found near fractured bedrock, but the limits of arsenic found are below the detection limits are considered non hazardous waste site.

No structures are planned to be built within the area of concern and will not pose any hazardous or risk of human life. Therefore, no further assessment or remediation is necessary.

CLOSURE & LIMITATIONS

This evaluation was performed in accordance with generally accepted engineering practices. The conclusions and recommendations contained in this report were based on the data collected during the course of the project and the interpretation of such data as dictated by our experience and background and our current understanding and interpretation of environmental regulatory agency regulations, guidelines and policy. Hence, our conclusions and recommendations are professional opinions; no other warranty is offered or implied. This report is limited to the areas of the site specifically described, does not include other areas of the property.

This opportunity to be service is appreciated. If you have questions regarding this plan, please contact this office at your earliest convenience.

Respectfully submitted,

Geo Environ Eng. Consultants, Inc.

Fahad Masud, PE
Vice President

Jabed Masud, MSCE
President

FM/JM/gm

Supplementary Laboratory Result

Enviro – Chem, Inc.
1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

LABORATORY REPORT

CUSTOMER: **Geo Environ Consultants, Inc**
4071 E. La Palma Ave. Ste. B, Anaheim, CA 92807
Tel(714)606-2598 E-Mail: Mjmas@sbcglobal.net
PROJECT: **Proposed Gas Station**
LOCATION: **28771 Highway 74, Lake Elsinore**
MATRIX:SOIL DATE RECEIVED:05/05/21
SAMPLING DATE:05/04/21 DATE ANALYZED:06/09-11/21
REPORT TO:MR. JABED MASUD DATE REPORTED:06/11/21

SAMPLE I.D.: **TP-2 (-1.0)** LAB I.D.: 210505-68

SOLUBLE THRESHOLD LIMIT CONCENTRATION (STLC) ANALYSIS
UNIT: mg/L IN THE STLC LEACHATE

ELEMENT ANALYZED	SAMPLE RESULT	PQL	DF	TTLC LIMIT	STLC LIMIT	EPA METHOD USED
Arsenic (As)	0.133	0.05	1	500	5.0	6010B
Barium (Ba)	8.30	0.5	1	10,000	100	6010B
Chromium (Cr)	ND	0.05	1	2,500	560/5.0@	6010B
Copper (Cu)	0.146	0.1	1	2,500	25	6010B
Lead (Pb)	0.057	0.05	1	1,000	5.0	6010B
Nickel (Ni)	0.538	0.25	1	2,000	20	6010B
Vanadium (V)	0.440	0.5	1	2,400	24	6010B

COMMENTS
DF = Dilution Factor
PQL = Practical Quantitation Limit
Actual Detection Limit = PQL X DF
ND = Below the actual detection limit or non-detected
TTLC = Total Threshold Limit Concentration
STLC = Soluble Threshold Limit Concentration
@ = Must meet the TCLP limit/chromium (5.0 mg/L in TCLP leachate)
** = TCLP Chromium/TTLC-Chromium VI recommended (if marked)
*** = The concentration exceeds the STLC Limit, and the sample is defined as hazardous waste as per CAL-TITLE 22 (if marked)

Data Reviewed and Approved by: _____
CAL-DHS ELAP CERTIFICATE No.: 1555