CITY OF EMERYVILLE
REDEVELOPMENT AGENCY
2200 POWELL STREET, SUITE 1200
EMERYVILLE, CALIFORNIA 94608
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July 31, 1995

Ms. Susan Hugo
Alameda County Health Care Services Agency
Department of Environmental Health
1131 Harbor Bay Parkway, Second Floor
Alameda, CA 94502

RE: 4800 San Pablo Avenue

Dear Susan:

Per our telephone conversation today, enclosed please find our consultant's proposed Remedial Action Plan for the above referenced site. I am also enclosing an earlier letter from the Consultant to you, recapping our last meeting in December 1994.

I appreciate your attention to this matter. We are nearing the close of very difficult negotiations for the purchase of this property, and are anxious to get resolution on the acceptability of this proposal as soon as possible.

Thanks.

Sincerely,

Maryann Leshin
Projects Coordinator

encl.

mal/4800/hugorap.ltr

HydroSolutions of California, Inc.
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Fair Oaks, California 95628 • (916) 967-1222 • FAX (916) 967-1223

December 14, 1994

Maryann Leshin
City of Emeryville Redevelopment Agency
2200 Powell Street, Suite 1200
Emeryville, California 94608-1806

SUBJECT: REMEDIAL ACTION
4800 SAN PABLO AVENUE
EMERYVILLE, CALIFORNIA

PROPOSAL NO: P77768

Dear Maryann:

HydroSolutions of California, Inc. (HSCI) is pleased to submit this proposal describing the work tasks and costs for completing a remedial action at 4800 San Pablo Avenue in Emeryville, California.

In light of on-site concentrations of total petroleum hydrocarbons-gasoline (TPH-G), benzene, toluene, xylene, and ethylbenzene (BTXE) in soils and localized presence of BTXE in groundwater, the subject property appears to be appropriate for implementing a limited remedial action. Remedial action will consist of; 1) submittal of a remedial action plan (RAP) which exercises the non-attainment provision, 2) initiation of a groundwater monitoring program, 3) incorporation of a health and safety plan and 4) soil sample collection during excavation activities conducted during land redevelopment.

Recently, the San Francisco Bay Regional Water Quality Control Board adopted Ground Water Basin Plan amendments which have included the concept of "Ground Water Non-Attainment Areas".

In the event of groundwater cleanup, the likelihood of not achieving drinking water standards (i.e. cleanup goals) is significant. Current best available ground water cleanup technologies, low yielding aquifers, attenuation mechanisms of small particle size sediment (i.e. clay and silts found beneath the subject property) and aquifer material have cumulatively resulted in unsuccessful groundwater cleanups during the last

many years of regulatory oversight. As a result of these observations, the non-attainment remedial alternative has been added to the Basin Plan as an additional option.

The Non-attainment provision provides consideration for the reasonable protection of beneficial uses and maximum benefit to the people of the state. Typically, non-attainment areas are limited groundwater pollution zones where contaminant concentrations are above water quality objectives. Non-attainment provisions can be implemented on a case-by-case basis provided the record substantiates the rationale for utilizing this option.

Based on the results and conclusions of the December 8, 1994 meeting with Alameda County Environmental Health, HSCI and the City of Emeryville Redevelopment Agency, HSCI suggests a remedial approach which focuses on three objectives; 1) pursue closure by evaluating the subject property with respect to the non-attainment provision, 2) address health and safety issues during construction and 3) establish a soil sampling program for excavations to be completed during redevelopment.

Remedial actions for the subject property will include the following tasks.

1) Information will be assembled regarding evaluation criteria identified in the non-attainment policy document.

2) A qualitative screening assessment of risk will be completed to evaluate the level of protection needed for the subject property, if any.

3) Plume management will consist of quarterly groundwater monitoring of existing monitor wells on the subject property. Sample analysis will include total petroleum hydrocarbons-gasoline (TPH-G), benzene, toluene, xylene, and ethylbenzene (BTXE).

4) A health and safety plan will be developed and implemented during grading and excavation activities conducted during construction.

5) Soil sampling and analysis for TPH-G, total petroleum hydrocarbons-diesel (TPH-D) and BTXE will be completed during excavation activities. Samples will

be collected from the walls and floor of selected excavations. Additional samples will be collected after aeration of spread sediment has occurred.

Estimated cost for completing the above tasks is $31,200.00. A cost breakdown has been included in the back of this proposal. Anticipated costs for addressing remedial actions has been considered however it is prudent to also incorporate a supplemental budget of $7,800 (25% of the budget) to use for unanticipated needs. Remedial responses often result in extra cost items.

Below is a brief description of each task.

1) Information will be assembled regarding evaluation criteria identified in the non-attainment policy document.

Types of information will include landuses of subject property and adjacent properties, hydrogeology, extent of contamination, source removal, likelihood of effecting a drinking water source, management measures, contingency options, commitment to mitigating measures and a description of the groundwater monitoring program.

2) A qualitative screening assessment of risk will be completed to evaluate the level of protection needed for the subject property, if any.

A specific methodology has not been assigned by ACEH however CAL-EPA has developed a qualitative method for the Preliminary Endangerment Assessment (PEA). This method will be considered.

3) Plume management will consist of quarterly groundwater monitoring of existing monitor wells on the subject property. Sample analysis will include total petroleum hydrocarbons-gasoline (TPH-G), benzene, toluene, xylene, and ethylbenzene (BTXE).

The primary field component of the remedial action is groundwater monitoring. Assuming the source of contamination has been removed, presence of contaminated groundwater would likely remain the same or diminish in concentration. This assumes that the area of highest concentration has been identified.

Quarterly sampling of WB-7, WB-8, WB-9, WB-12 and WB-14 has been suggested by ACEH. HSCI proposes a minimum of a year (four

quarters) and has budgeted for eighteen months. Subsequent to collection of field samples, data will be evaluated for trends. A decreasing trend suggests an improvement in the groundwater aquifer which supports the decision for reducing the frequency of sampling to semiannual, annual or termination. It must be recognized that termination of the groundwater monitoring program can potentially occur many years from its initiation.

4) A health and safety plan will be developed and implemented during grading and excavation portions of construction.

This plan will be implemented by the contractor responsible for grading the site. The plan will be signed by a certified Industrial Hygienist (CIH).

5) Soil sampling and analysis for TPH-G, total petroleum hydrocarbons-diesel (TPH-D) and BTXE will be completed during excavation activities. Samples will be collected from the walls and floor of selected excavations. Additional samples will be collected after aeration has occurred.

Up to ten samples have been estimated for the initial sampling. HSCI has allotted two days for identifying areas which sediment may be contaminated, soil sampling and documenting conditions encountered in the field.

Contaminated sediment may be present in the fine sandy material adjacent WB-14 ,however, the volume of sediment to be removed is not known. The greatest variable in excavation/cleanup costs is the volume of sediment requiring removal and transport to the landfill (see attached table).

Sediment will be spread in a designated area (to be assigned by City) on the subject property. Spreading will cause aeration and biodegradation which will result in the reduction of TPH-G and benzene concentrations. Enhancement of these effects can be made by expediting field activities during the hot months of summer. The Bay Area Air Quality Management District (BAAQMD) must be consulted to determine the need for obtaining a permit. It is the opinion of HSCI that levels of emissions will not likely require a permit from BAAQMD.

After a period of time, soil samples will be collected from the treated sediment and analyzed for TPH-G and benzene, toluene, xylene, and ethylbenzene (BTXE). Assuming BTXE concentrations are nondetectable and TPH-G concentrations in sediment is low, the

material may be transported to a landfill for disposal as a nonhazardous material. Specific cleanup levels of treated sediment depend on the landfill selected and their criteria.

An argument which can enhance the strength for gaining regulatory acceptance of the chosen remedial action (non-attainment area) is the identification of natural occurring biodegradation of the petroleum hydrocarbons, primarily BTXE. It is the opinion of HSCI that general water quality information be collected and an explanation describing the possible presence of natural biodegradation (intrinsic bioremediation) processes be included in the RAP. Rates of decay (assimilative capacity) existing in groundwater beneath the subject property can further support decisions for termination of the groundwater monitoring program. This information would be included in correspondence made to the regulating agencies when requesting termination or decreased frequency of the monitoring program.

A brief description of intrinsic bioremediation is included below for the purpose of explaining the conceptual model of this process.

Intrinsic remediation is achieved when naturally occurring attenuation mechanisms, such as biodegradation (aerobic and anaerobic), bring about a reduction in the total mass of a contaminant dissolved in ground water. In some cases, intrinsic remediation will reduce dissolved-phase contaminant concentrations to below maximum contaminant levels (MCL) before the contaminant plume reaches potential populations (e.g. people, municipal or domestic wells).

Microbes existing in the subsurface require a food source, nutrients, moisture and electron receptors to grow and multiply. In the event of petroleum contamination, a food source is present (petroleum) and typically nutrients and electron acceptors are available in the groundwater flow. As the microbes consume the petroleum, nutrients and electron acceptors are depleted within the groundwater. This causes biodegradation of the petroleum to stop. Typically oxygen, nitrates, iron, manganese, sulfate and/or carbon dioxide are depleted. Groundwater continuously provides background levels of these nutrients and electron acceptors thereby revitalizing a portion of the microbes in time. This results in continued degradation of petroleum at a rate achievable by the groundwater flow (nutrient and electron acceptor delivery rate).

Laboratory costs are based on a two week turnaround time. If more rapid data analysis is requested, the laboratories will use a 1.5-2.0 multiplier. Water samples will be analyzed for total petroleum hydrocarbons (TPH-G) and BTXE (EPA Method 8020). Soil samples will also be analyzed for TPH-D. If additional analysis is required, cost will be up to $75.00 for TPH-G/BTXE per sample and $120.00 for TPH-G/TPH-D/BTXE. This cost will be added to the proposed budget.

The proposed cost does not include any permits or fees enforced by any environmental or regulatory agencies. If this is required, associated costs will be added to the proposed cost estimate.

HSCI will only observe grading operations, collect soil samples and identify sediment requiring spreading and aeration.

HSCI is not responsible for damages, direct or indirect, caused to underground utilities or other structures whether on-site or off-site. Such additional costs will be the responsibility of the client for payment.

Work will be initiated upon receipt of the signed Authorization to Proceed. Estimated time for completion of this work is 18 months. If you have questions regarding this proposal, please contact me. Looking forward to your reply.

Respectfully submitted,

Stephen J. Baker
Project Manager

COST BREAKDOWN

Description	Associated Cost
Information will be assembled regarding evaluation criteria identified in the non-attainment policy document.	$ 9,000
A qualitative screening assessment of risk will be completed to evaluate the level of protection needed for the subject property, if any.	$ 700
Plume management will consist of quarterly groundwater monitoring of existing monitor wells on the subject property. Sample analysis will include total petroleum hydrocarbons-gasoline (TPH-G), benzene, toluene, xylene, and ethylbenzene (BTXE).	$14,400
A health and safety plan will be developed and implemented during grading and excavation portions of construction.	$ 900
Soil sampling and analysis for TPH-G, total petroleum hydrocarbons-diesel (TPH-D) and BTXE will be completed during excavation activities. Samples will be collected from the walls and floor of selected excavations. Additional samples will be collected after aeration has occurred.	$ 6,200
	$31,200

1 Estimate does not include cost for excavation and spreading by a certified hazardous waste contractor. Cost over and above typical excavation of construction projects of a similar nature may be $1,000-$3,000.

2 Cost for sediment disposal or reuse can vary from $600, if utilized beneath roadbase, to $5,000-$15,000 if sediment requires disposal at Redwood Landfill.

3 Backfill cost are not considered.