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November 5, 1998

Chevron Products Company
6001 Bollinger Canyon Road
Building L, Room 1110
PO Box 6004
San Ramon, CA 94583-0904

Mr. Barney Chan
Alameda County Health Care Services
Department of Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Philip R. Briggs
Project Manager
Site Assessment & Remediation
Phone 925 842-9136
Fax 925 842-8370

Re: Chevron Service Station #9-0076
4265 Foothill Blvd.
Oakland, California

Look @ RBCA - B10 4265

Dear Mr. Chan:

Enclosed are copies of bio-parameter charts that were prepared to make a determination of the presence of intrinsic bioremediation within the hydrocarbon plume at the above noted site.

The evaluation of indicator parameters across a dissolved contaminant plume can be used in the demonstration of intrinsic bioremediation. One or more trends observed across a dissolved plume (with increasing contaminant concentration) would suggest the potential occurrence of intrinsic bioremediation.

With increasing BTEX concentrations, the expected trend in indicator parameter concentrations would be:

They left out the most important graphs D.O & Redox vs BTEX.

Relative Decrease In:

- Dissolved Oxygen
- Oxidation-Reduction Potential (Redox)
- Nitrate
- Sulfate



in absence of d.o.

Relative Increase In:

- ✓ Dissolved Iron (Ferrous)
- ✓ Alkalinity

The sampled wells are presented on the X-axis from the up-gradient wells to the down-gradient wells through the contaminant plume. The resulting order of the wells is C-1, C-2, C-4, C-6, and C-7 through the plume. The sum of the BTEX results for each well and the indicator bio-parameter analytical results for each well are plotted on the Y-axis to create the attached plots. The plots are then evaluated by observation for apparent trends in the data.

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The observed trend of the indicator parameters of nitrate, sulfate alkalinity and dissolved iron (ferrous) are consistent with the occurrence of intrinsic bioremediation in the groundwater at this site.

The plots of the indicator parameters versus total BTEX for the site wells indicates the potential for intrinsic bioremediation occurring in the groundwater plume associated with this site. The effect of this process will be to stabilize the containment plume and reduce the size of the plume as the source area concentrations are reduced.

If you have any questions or comments, call me at (925) 842-9136.

Sincerely,

CHEVRON PRODUCTS COMPANY



Philip R. Briggs
Site Assessment and Remediation Project Manager

Enclosure

CC. Mr. Alex Perez
Shell Oil Company
PO Box 8080
Matinez, CA 94553

Mr. Scott Hooton
BP Oil Company 295 SW 41st Street
Renton, WA 98055-4931

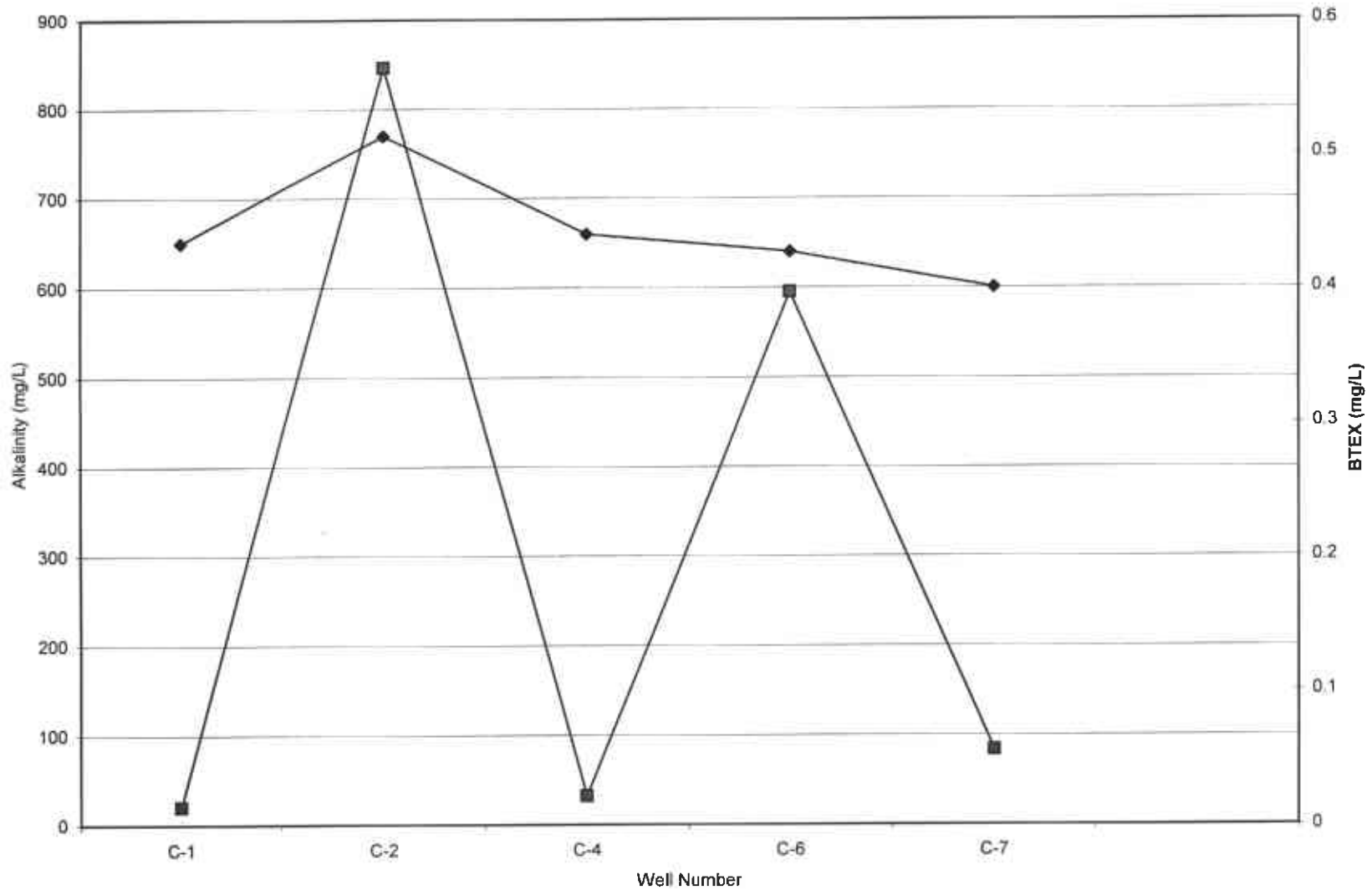
American Stores Properties, Inc.
348 East South Temple Street
Salt Lake City, UT 84111
Attn. Barbara Russell

Mr. Bill Scudder, Chevron

Chevron Station #9-0076

Alkalinity vs. BTEX

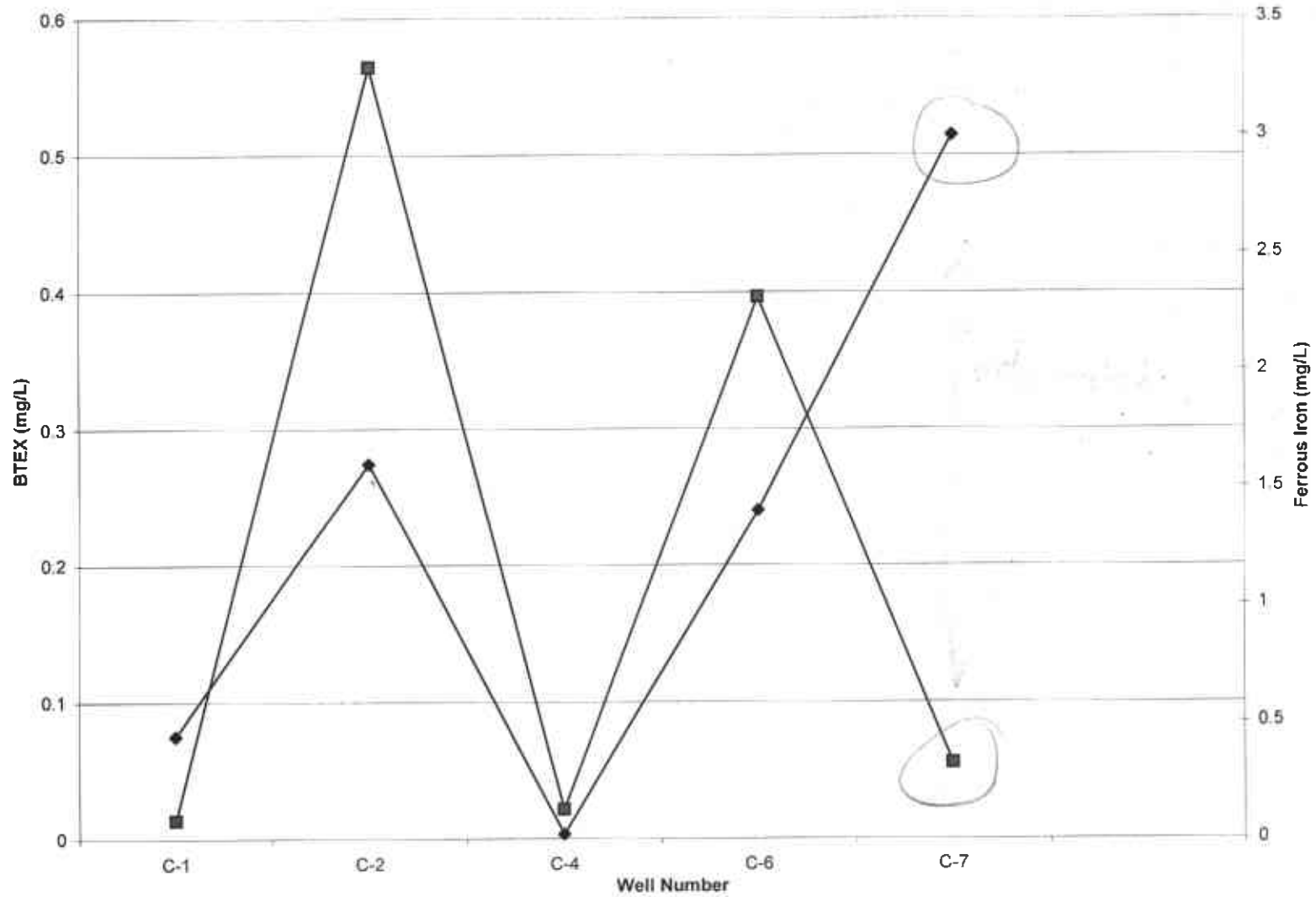
not expected trend



—◆— Alkalinity mg/L —■— BTEX mg/L

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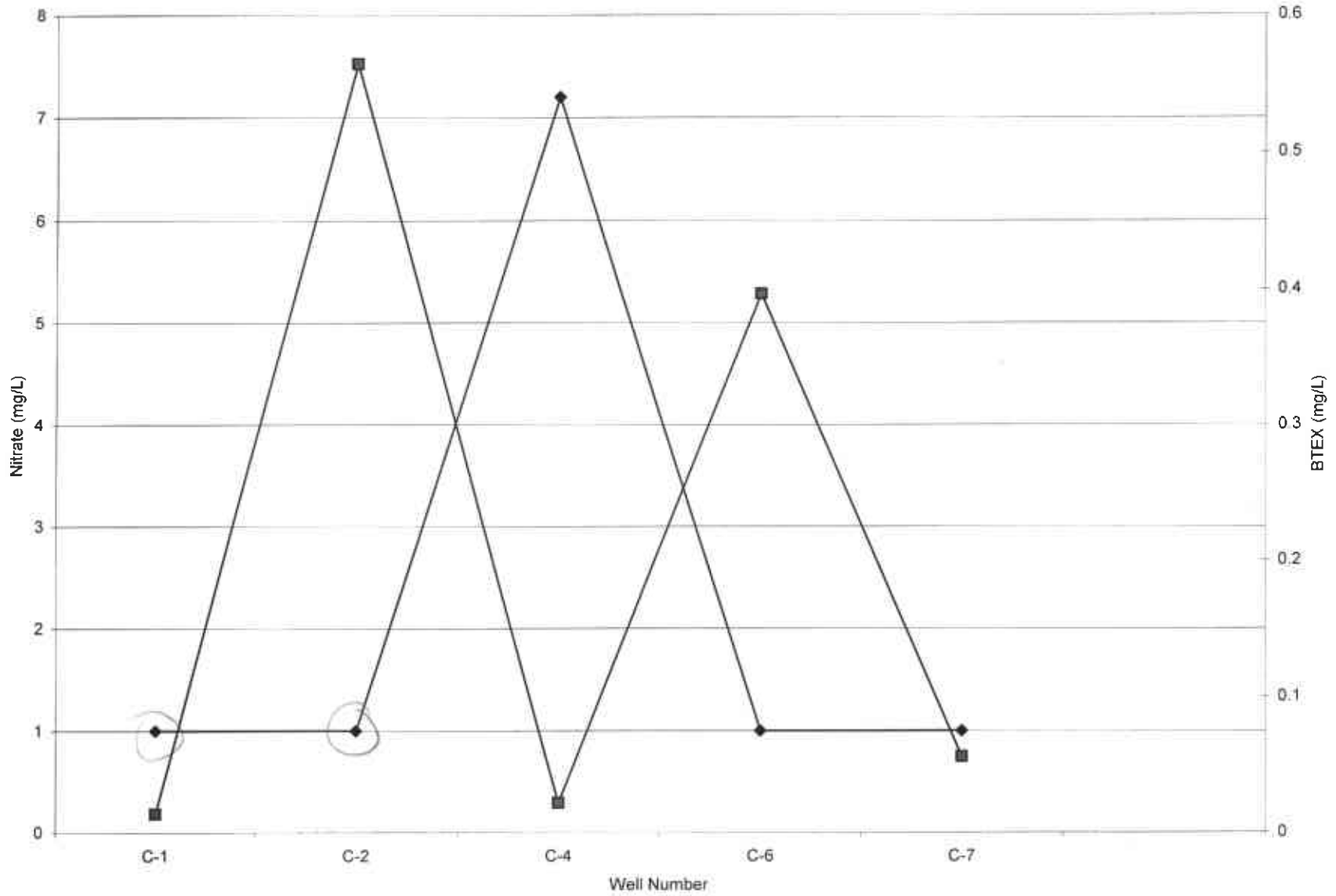
Ferrous Iron vs. BTEX



B6

■ BTEX mg/L ◆ Ferrous Iron mg/L

Chevron Station #9-0076 Nitrate vs. BTEX



No pattern.

◆ Nitrate mg/L ■ BTEX mg/L

Chevron Station #9-0076 Sulfate vs. BTEX

