



FLUOR DANIEL GTI

September 21, 1998

Mr. Robert Cochran
Chevron Products Company
6001 Bollinger Canyon Road
Building "L", Room 1102
P.O. Box 5004
San Ramon, CA 94583-0804

Subject: Release Investigation Report
Chevron Service Station #9-1252
11836 Old Glenn Highway
Eagle River, Alaska

Dear Mr. Cochran:

Fluor Daniel GTI, Inc. was retained by Chevron Products Company to perform a release investigation at the service station referenced above. Field activities were performed on August 17, 1998, which involved the completion of two soil borings and the collection of samples for field screening and laboratory analysis (Figure 1). This report has been prepared to document the release investigation field activities and summarize the sampling results.

Background

Between August 29 and September 2, 1995, Fluor Daniel GTI (formerly Groundwater Technology) personnel were on-site to document the removal of three underground storage tanks (UST's) and to collect soil samples required by the Alaska Department of Environmental Conservation (ADEC). Results from the sampling indicated that soil below the northwestern and southwestern dispensers contained concentrations of benzene, toluene, ethylbenzene, and xylenes (BTEX) and gasoline range organics (GRO) above proposed ADEC Level B cleanup standards. These proposed cleanup standards (200 mg/kg DRO, 100 mg/kg GRO, 2000 mg/kg RRO, 0.5 mg/kg benzene, and 15 mg/kg total BTEX) are based on scoring criteria outlined in the attached ADEC Matrix Score Sheet (Table 1). Sample DI1A-S2, from the southwest dispenser, contained 1,100 mg/kg GRO, 0.72 mg/kg benzene, and 337.72 mg/kg total BTEX, which are above cleanup standards. Sample DI2-S1, from the northwest dispenser, contained 120 mg/kg GRO and 23.16 mg/kg total BTEX, which are above cleanup standards.

In a letter dated January 23, 1996, the ADEC requested the completion of a release investigation to delineate subsurface petroleum hydrocarbon impacts. In response to this request, Fluor Daniel GTI, Inc

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OCT 20 1998

ADEC STORAGE
TANK PROGRAM
FAIRBANKS

0116

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DEC 21 2000

Dept. of Environmental Conservation
Underground Storage Tanks — FAP



(FDGTI) developed a work plan to complete two 40 foot deep soil borings in the immediate vicinity of the northwestern and southwestern dispensers.

Methods

0 0117

On August 17, 1998, Fluor Daniel GTI completed two soil borings (BH-1 and BH-2) using a truck mounted drill rig equipped with 8-inch hollow-stem augers. The boring locations are illustrated in Figure 1, along with subsurface product pipelines, soil vapor extraction piping, and facility utilities. Due to the proximity to subsurface utilities, soil boring BH-2 was hand excavated to a depth of 4 feet below ground surface (bgs) before drilling.

Soil boring lithology was logged in accordance with the Unified Soil Classification System. Drilling logs have been prepared and are presented in the attachments. Soil samples were collected at five foot intervals using two foot long split-spoons. The split spoons were decontaminated prior to each sampling event. A photoionization detector (PID) was used to screen the samples for the presence of headspace volatile organic compounds.

Due to the dense nature of the soils in soil boring BH-1, near the southwestern dispenser, the boring was terminated at a depth 27 feet bgs. Two samples (BH1-20, BH1-25) were collected from BH-1 and submitted for laboratory analysis. Soil boring BH-2, near the northwestern dispenser, was successfully completed to a depth 40 feet bgs. Two samples (BH2-15 and BH2-40) were collected from this boring, and submitted for laboratory analysis. Sample BH2-15 was selected from the interval with the highest PID response, and sample BH2-40 was submitted from the bottom of the boring. The soil samples were analyzed for BTEX using EPA method 8020, and GRO using EPA method 8015 modified. Groundwater was not encountered in either soil boring.

Quality control samples included duplicate samples of BH1-25 and BH2-40 (BH1-25a and BH2-40a, respectively), a laboratory trip blank (TRIP BLANK), and a decontamination rinsate sample (DECON RINSATE). These samples were analyzed using the above referenced methods.

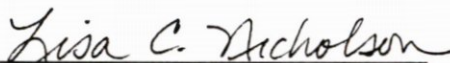
Results and Discussion

Soil lithologies encountered in the boreholes during drilling consisted of well-graded gravels containing sand and silt. Soil sample analytical results are summarized in Table 2. The ADEC Level B soil cleanup standards are shown at the bottom of the table for comparison. Reported BTEX and GRO results for all samples were below detection limits, and also below the most stringent ADEC soil cleanup standards.




Field and laboratory quality assurance/quality control (QA/QC) results were within acceptable limits. The QA/QC results suggest that sample integrity was maintained during sample collection, handling, shipment, and analysis. Laboratory results and chain-of-custody records are attached.

Sincerely,
Fluor Daniel GTI, Inc.
Written by:



Lisa C. Nicholson
Associate Geologist

0118
Fluor Daniel GTI, Inc.
Reviewed/Approved by:



Thomas J. Beckman
Project Manager

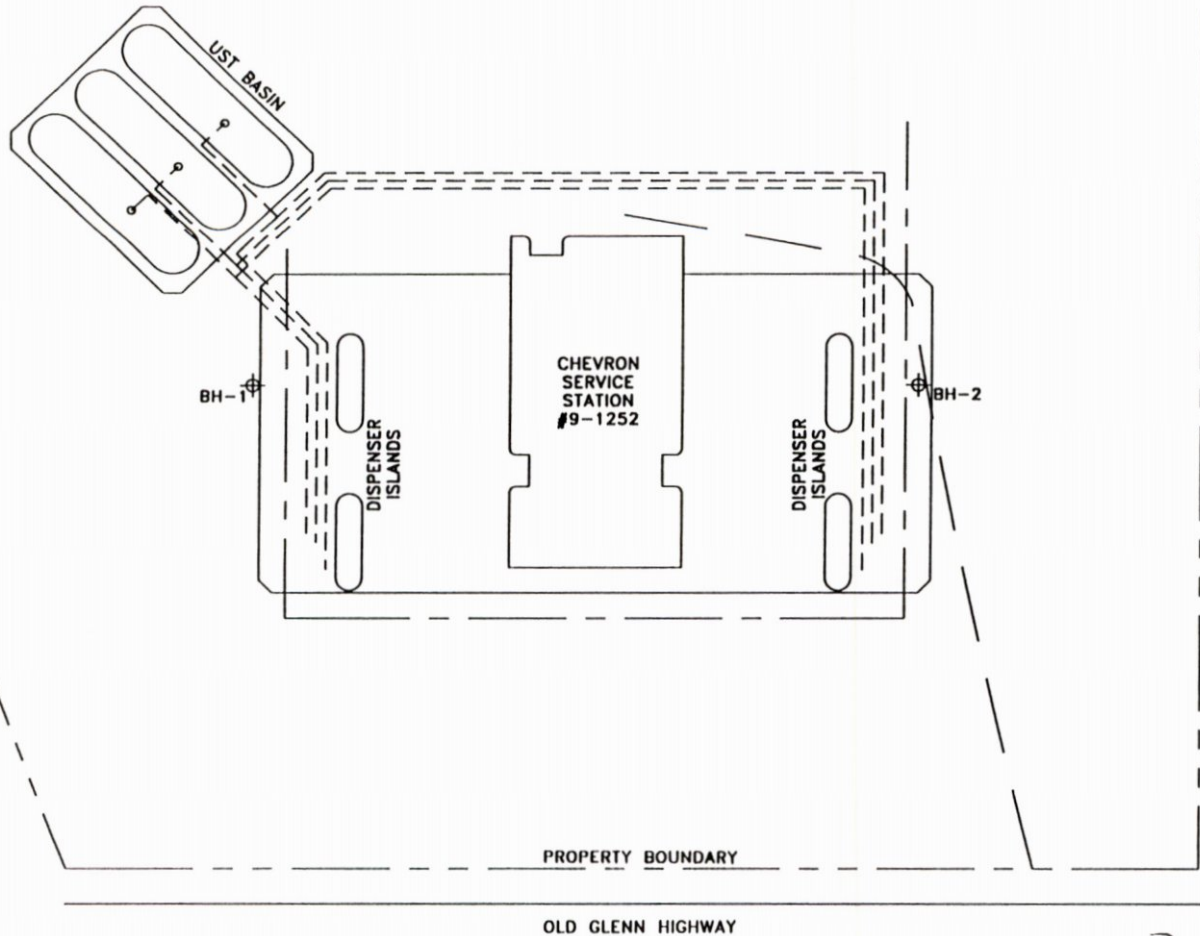
Attachments

1. Figure 1, Site Map
2. Drilling Logs
3. Table 1, ADEC Matrix Score Sheet
4. Table 2, Summary of Soil Sample Analytical Results
5. Laboratory Results and Chain-of-Custody Record



LEGEND

- UST PIPING
- - - VAPOR EXTRACTION PIPING
- NATURAL GAS PIPING
- BH-1 ⊕ SOIL BORING



FLUOR DANIEL GTI  

SITE MAP

| | | | |
|--|----------|------------------------|-----------|
| CLIENT: CHEVRON PRODUCTS COMPANY SERVICE STATION # 9-1252 | | | |
| LOCATION: OLD GLENN HIGHWAY ANCHORAGE, ALASKA | | | |
| ACAD FILE: chersite.dwg | | PROJECT NO.: 105702.01 | |
| REV.: 1 | | | |
| DES.: LN | DET.: DG | DATE: 9/9/98 | FIGURE: 1 |
| PM: T. BECKMAN | | PE/RC: | |

0119



Drilling Log

Soil Boring **BH-01**

Project Chevron Service Station 9-1252 Owner Chevron Products Company
 Location Anchorage, Alaska Proj. No. 105702.01
 Surface Elev. N/A ft. Total Hole Depth 27 ft. Diameter 8.25 in.
 Top of Casing N/A ft. Water Level Initial N/A ft. Static N/A ft.
 Screen: Dia N/A in. Length N/A ft. Type/Size N/A in.
 Casing: Dia N/A in. Length N/A ft. Type N/A
 Fill Material N/A Rig/Core CME-75
 Drill Co. Discovery Drilling Method Hollow stem auger
 Driller Eric Brown Log By NB/LCN Date 08/17/98 Permit # N/A
 Checked By Tom Beckman License No. N/A

See Site Map
For Boring Location

COMMENTS:


Placed 5' south of SW dispenser to miss product and vapor extraction lines.

0120

| Depth (ft.) | PID (ppm) | Sample ID | Blow Count/ % Recovery | Graphic Log | USCS Class. | Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50% |
|-------------|-----------|-----------|---------------------------|-------------|-------------|---|
| -2 | | | | | | Begin drilling, 08/17/97, 13:30 |
| 0 | | | | Asphalt | | ASPHALT, 3" thick |
| 2 | | | | | GW | |
| 4 | 6.3 | BHI-5 | 9 9 11 15 | | GM | SANDY GRAVELS: light gray, moderately sorted, subrounded to subangular, medium to coarse gravels with 40% light gray, medium grained sand and 10% silt. Contains 8" brown silty gravel layer. |
| 6 | | | | | | |
| 8 | | | | | | |
| 10 | 8.2 | BHI-10 | 12 12 12 12 | | GW | SANDY GRAVELS: gray, dry, moderately sorted, subangular to subrounded, coarse gravel with 20-30% gray, medium grained sand and 10-15% silt. |
| 12 | | | | | | |
| 14 | 3.8 | BHI-15 | 7 13 12 13 | | | SANDY GRAVELS: gray, dry, moderately sorted, subrounded, coarse gravel with 20-30% gray, medium grained sand and 10-15% silt |
| 16 | | | | | | |
| 18 | | | | | | |
| 20 | 3.3 | BHI-20 | 9 18 23 20 | | GM | SILTY GRAVELS: light gray, weakly sorted, subrounded, dry, coarse gravels with 10-20% light gray, fine sand and 20-30% gray silt. |
| 22 | | | | | | |
| 24 | 4.4 | BHI-25 | 11 13 | | | |

Project Chevron Service Station 9-1252 Owner Chevron Products Company
 Location Anchorage, Alaska Proj. No. 105702.01

0121







| Depth (ft.) | PID (ppm) | Sample ID | Blow Count/ % Recovery | Graphic Log | USCS Class. | Description |
|-------------|-----------|-----------|---------------------------|---|-------------|--|
| | | | | | | (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50% |
| 24 | 4.4 | BHI-25 | 11 13 21 49 |  | GM | <i>Rig bogged down. Auger was jammed with coarse gravel. Tried to auger down further but auger continued to jam, despite all attempts to continue.</i> |
| 26 | | | | | | <i>Final refusal at 27 feet.</i> |
| 28 | | | | | | <i>End of boring @ 27' bgs, 08/17/98, 13:00</i> |
| 30 | | | | | | <i>Closed borehole with drill cuttings.</i> |
| 32 | | | | | | |
| 34 | | | | | | |
| 36 | | | | | | |
| 38 | | | | | | |
| 40 | | | | | | |
| 42 | | | | | | |
| 44 | | | | | | |
| 46 | | | | | | |
| 48 | | | | | | |
| 50 | | | | | | |
| 52 | | | | | | |
| 54 | | | | | | |
| 56 | | | | | | |

Project Chevron Service Station 9-1252 Owner Chevron Products Company
 Location Anchorage, Alaska Proj. No. 105702.01
 Surface Elev. N/A ft. Total Hole Depth 39.5 ft. Diameter 8.25 in.
 Top of Casing N/A ft. Water Level Initial N/A ft. Static N/A ft.
 Screen: Dia N/A in. Length N/A ft. Type/Size N/A in.
 Casing: Dia N/A in. Length N/A ft. Type N/A
 Fill Material N/A Rig/Core CME-75
 Drill Co. Discovery Drilling Method Hollow stem auger
 Driller Eric Brown Log By NB/LCN Date 08/17/98 Permit # N/A
 Checked By Tom Beckman License No. N/A

See Site Map
For Boring Location

COMMENTS:
Placed 5' north of NW dispenser to miss product and vapor extraction lines.

0122

| Depth (ft.) | PID (ppm) | Sample ID | Blow Count/ % Recovery | Graphic Log | USCS Class. | Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50% |
|-------------|-----------|-----------|------------------------|---|-------------|--|
| -2 | | | | | | Begin drilling, 08/17/97, 08:45 |
| 0 | | | |  | | CONCRETE, 8" thick |
| 2 | | | | | | Excavated hole by hand to 48 inches to clear utilities |
| 4 | 11.7 | BH2-5 | 8 9 9 7 |  | GW | SANDY GRAVELS: light gray, moderately sorted, subrounded, dry, medium to coarse gravels with 30-40% light gray, medium grained sand. |
| 8 | 14.6 | BH2-10 | 30 19 13 13 |  | GM | SILTY GRAVELS: light gray, weakly sorted, subrounded, dry, medium to very coarse gravels with 20-30% light gray, medium grained sand and 10-20% gray silt. |
| 14 | 22.5 | BH2-15 | 13 8 7 9 |  | GC | CLAYEY SAND: light gray, weakly sorted, subrounded, dry, medium to very coarse gravels with 30-70% dark brown clay. |
| 20 | 4.5 | BH2-20 | 18 34 50 |  | GM | SILTY GRAVELS: light gray, weakly sorted, subrounded, moist, medium to very coarse gravels with 20-30% light gray, fine to medium grained sand and 10-20% gray silt. |
| 24 | 4.8 | BH2-25 | 26 50 |  | | SILTY GRAVELS: light gray, weakly sorted, subrounded, medium to very coarse gravels with 20-30% gray sand and 10-20% gray silt. |

Project Chevron Service Station 9-1252 Owner Chevron Products Company
 Location Anchorage, Alaska Proj. No. 105702.01

1 **0123**




| Depth (ft.) | PID (ppm) | Sample ID | Blow Count/ % Recovery | Graphic Log | USCS Class. | Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50% |
|-------------|-----------|-----------|---------------------------|---|-------------|--|
| 24 | | | | | | Split-spoon refusal at 24 feet. Only 0.5 feet of sample collected. |
| 26 | | | | | | |
| 28 | | | | | | Driller noted that drilling is getting very difficult. |
| 30 | 4.3 | BH2-30 | 13 19 28 40 |  | | SILTY GRAVELS: light gray, weakly sorted, subrounded, moist, medium to very coarse gravels with 20-30% light gray, fine to medium grained sand and 10-20% gray silt. |
| 32 | | | | | GM | |
| 34 | 3.8 | BH2-35 | 14 23 50 |  | | SILTY GRAVELS: light gray, weakly sorted, subrounded, moist, medium to very coarse gravels with 25-30% gray, medium grained sand and 15-25% gray silt. |
| 36 | | | | | | |
| 38 | | | | | | |
| 40 | 3.5 | BH2-40 | 40 50 |  | | SILTY GRAVELS: light gray, weakly sorted, subrounded, moist, medium to very coarse gravels with 25-30% gray, medium grained sand and 15-25% gray-brown silt. |
| 42 | | | | | | End of boring @ 39.5' bgs, 08/17/98, 16:30 |
| 44 | | | | | | Closed borehole with drill cuttings. Spread one-tenth yard gravel on site |
| 46 | | | | | | |
| 48 | | | | | | |
| 50 | | | | | | |
| 52 | | | | | | |
| 54 | | | | | | |
| 56 | | | | | | |

Table 1
ADEC MATRIX SCORE SHEET
 Chevron Service Station 9-1252

0124

| | | |
|---|------|-----------|
| 1. *Depth to Subsurface Water | | |
| < 5 feet | [10] | |
| 5 - 15 feet | [8] | |
| 16 - 25 feet | [6] | |
| 26 - 50 feet | [4] | |
| > 50 feet | [1] | 1 |
| 2. Mean Annual Precipitation | | |
| > 40 inches | [10] | |
| 26 - 40 inches | [5] | |
| 16 - 25 inches | [3] | 3 |
| < 15 inches | [1] | |
| 3. *Soil Type (Unified Soil Classification) | | |
| Clean, coarse-grained soils | [10] | 10 |
| Coarse-grained soils with fines | [8] | |
| Fine-grained soils (low organic carbon) | [3] | |
| Fine-grained soils (high organic carbon) | [1] | |
| 4. Potential Receptors | | |
| Public water system within 1000 feet, or private water system within 500 feet | [15] | 15 |
| Public/private water system within 1/2 mile | [12] | |
| Public/private water system within one mile | [8] | |
| No water system within one mile | [4] | |
| Nonpotable groundwater | [1] | |
| 5. Volume of Contaminated Soil | | |
| > 500 cubic yards | [10] | |
| 101 - 500 cubic yards | [8] | 8 |
| 26 - 100 cubic yards | [5] | |
| > De Minimis - 25 cubic yards | [2] | |
| De Minimis | [0] | |
| MATRIX SCORE | | 37 |

*From lowest point of contamination to groundwater

| Matrix Score | Cleanup Level in mg/kg | | | | |
|---------------|------------------------|-------------------------|-------------------------|---------|------------|
| | diesel range organics | gasoline range organics | residual range organics | Benzene | Total BTEX |
| Level A > 40 | 100 | 50 | 2000 | 0.1 | 10 |
| Level B 27-40 | 200 | 100 | 2000 | 0.5 | 15 |
| Level C 21-26 | 1000 | 500 | 2000 | 0.5 | 50 |
| Level D < 21 | 2000 | 1000 | 2000 | 0.5 | 100 |



Table 2
Summary of Soil Sample Analytical Results
Chevron Service Station #9-1252, Eagle River, Alaska
September 21, 1998

| Sample ID | Sample Depth (ft) | Date Sampled | PID Reading (ppmv) | Benzene (mg/kg) | Toluene (mg/kg) | Ethyl-benzene (mg/kg) | Total Xylenes (mg/kg) | Total BTEX (mg/kg) | GRO (mg/kg) |
|---|-------------------|--------------|--------------------|-----------------|-----------------|-----------------------|-----------------------|--------------------|--------------|
| BH1-20 | 19-21 | 08/17/98 | 3.3 | <0.0500 | <0.0500 | <0.0500 | <0.100 | -- | <5.00 |
| BH1-25 | 24-26 | 08/17/98 | 4.4 | <0.0500 | <0.0500 | <0.0500 | <0.100 | -- | <5.00 |
| BH1-25a (duplicate) | 24-26 | 08/17/98 | 4.4 | <0.0500 | <0.0500 | <0.0500 | <0.100 | -- | <5.00 |
| BH2-15 | 13.5-15.5 | 08/17/98 | 22.5 | <0.0500 | <0.0500 | <0.0500 | <0.100 | -- | <5.00 |
| BH2-40 | 38.5-39.5 | 08/17/98 | 3.5 | <0.0500 | <0.0500 | <0.0500 | <0.100 | -- | <5.00 |
| BH2-40a (duplicate) | 38.5-39.5 | 08/17/98 | 3.5 | <0.0500 | <0.0500 | <0.0500 | <0.100 | -- | <5.00 |
| TRIP BLANK | NA | 08/17/98 | NA | <0.0500 | <0.0500 | <0.0500 | <0.100 | -- | <5.00 |
| DECON RINSATE | NA | 08/17/98 | NA | <0.0500 | <0.0500 | <0.0500 | <0.100 | -- | <5.00 |
| Cleanup guidelines (ADEC Matrix Level B) | | | | 0.5 | NA | NA | NA | 15 | 100.0 |

Notes:

- NA = Not applicable/not analyzed/not available
- = Total BTEX cannot be determined based on non-detect results for individual components.
- GRO = Gasoline range organics as determined by EPA Method 8015 using ADEC Method AK101 reporting limits.
- mg/kg = milligrams per kilogram
- ppmv = parts per million (vapor)

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BOTHELL ■ (425) 420-9200 ■ FAX 420-9210
SPOKANE ■ (509) 924-9200 ■ FAX 924-9290
PORTLAND ■ (503) 906-9200 ■ FAX 906-9210

| | | |
|---|---|--|
| Fluor Daniel - GTI, Inc. - Alaska 900 W 5th Avenue, Suite 300 Anchorage, AK 99501 | Project: Chevron #9-1252 Project Number: 105702.01 Project Manager: Brennen Fleener | Sampled: 8/17/98 Received: 8/19/98 Reported: 8/26/98 11:32 |
|---|---|--|

ANALYTICAL REPORT FOR SAMPLES:

0126

| Sample Description | Laboratory Sample Number | Sample Matrix | Date Sampled |
|--------------------|--------------------------|---------------|--------------|
| BH1-20 | B808315-01 | Soil | 8/17/98 |
| BH1-25 | B808315-02 | Soil | 8/17/98 |
| BH1-25a | B808315-03 | Soil | 8/17/98 |
| BH2-15 | B808315-04 | Soil | 8/17/98 |
| BH2-40 | B808315-05 | Soil | 8/17/98 |
| BH2-40a | B808315-06 | Soil | 8/17/98 |
| TRIP BLANK | B808315-07 | Water | 8/17/98 |
| DECON RINSATE | B808315-08 | Water | 8/17/98 |

Joy B Chang, Project Manager



NORTH CREEK ANALYTICAL

Environmental Laboratory Services

BOTHELL ■ (425) 420-9200 ■ FAX 420-9210
 SPOKANE ■ (509) 924-9200 ■ FAX 924-9290
 PORTLAND ■ (503) 906-9200 ■ FAX 906-9210

| | | |
|---|---|--|
| Fluor Daniel - GTI, Inc. - Alaska 900 W 5th Avenue, Suite 300 Anchorage, AK 99501 | Project: Chevron #9-1252 Project Number: 105702.01 Project Manager: Brennen Fleener | Sampled: 8/17/98 Received: 8/19/98 Reported: 8/26/98 11:32 |
|---|---|--|

Gasoline Hydrocarbons (2-Methylpentane to 1,2,4-Trimethylbenzene) and BTEX by EPA 8015M and 8021B
North Creek Analytical - Bothell

0127

| Analyte | Batch Number | Date Prepared | Date Analyzed | Surrogate Limits | Reporting Limit | Result | Units | Notes* |
|-----------------------------|--------------|---------------|---------------|-------------------|-----------------|--------|-------------|--------|
| BH1-20 | | | | B808315-01 | | | Soil | |
| Gasoline Range Hydrocarbons | 0880509 | 8/19/98 | 8/19/98 | | 5.00 | ND | mg/kg dry | |
| Benzene | " | " | " | | 0.0500 | ND | " | |
| Toluene | " | " | " | | 0.0500 | ND | " | |
| Ethylbenzene | " | " | " | | 0.0500 | ND | " | |
| Xylenes (total) | " | " | " | | 0.100 | ND | " | |
| Surrogate: 4-BFB (FID) | " | " | " | 50.0-150 | | 97.9 | % | |
| Surrogate: 4-BFB (PID) | " | " | " | 50.0-150 | | 100 | " | |
| BH1-25 | | | | B808315-02 | | | Soil | |
| Gasoline Range Hydrocarbons | 0880509 | 8/19/98 | 8/19/98 | | 5.00 | ND | mg/kg dry | |
| Benzene | " | " | " | | 0.0500 | ND | " | |
| Toluene | " | " | " | | 0.0500 | ND | " | |
| Ethylbenzene | " | " | " | | 0.0500 | ND | " | |
| Xylenes (total) | " | " | " | | 0.100 | ND | " | |
| Surrogate: 4-BFB (FID) | " | " | " | 50.0-150 | | 63.3 | % | |
| Surrogate: 4-BFB (PID) | " | " | " | 50.0-150 | | 96.8 | " | |
| BH1-25a | | | | B808315-03 | | | Soil | |
| Gasoline Range Hydrocarbons | 0880509 | 8/19/98 | 8/20/98 | | 5.00 | ND | mg/kg dry | |
| Benzene | " | " | " | | 0.0500 | ND | " | |
| Toluene | " | " | " | | 0.0500 | ND | " | |
| Ethylbenzene | " | " | " | | 0.0500 | ND | " | |
| Xylenes (total) | " | " | " | | 0.100 | ND | " | |
| Surrogate: 4-BFB (FID) | " | " | " | 50.0-150 | | 92.6 | % | |
| Surrogate: 4-BFB (PID) | " | " | " | 50.0-150 | | 97.4 | " | |
| BH2-15 | | | | B808315-04 | | | Soil | |
| Gasoline Range Hydrocarbons | 0880509 | 8/19/98 | 8/20/98 | | 5.00 | ND | mg/kg dry | |
| Benzene | " | " | " | | 0.0500 | ND | " | |
| Toluene | " | " | " | | 0.0500 | ND | " | |
| Ethylbenzene | " | " | " | | 0.0500 | ND | " | |
| Xylenes (total) | " | " | " | | 0.100 | ND | " | |
| Surrogate: 4-BFB (FID) | " | " | " | 50.0-150 | | 98.0 | % | |
| Surrogate: 4-BFB (PID) | " | " | " | 50.0-150 | | 99.8 | " | |
| BH2-40 | | | | B808315-05 | | | Soil | |
| Gasoline Range Hydrocarbons | 0880509 | 8/19/98 | 8/25/98 | | 5.00 | ND | mg/kg dry | |
| Benzene | " | " | " | | 0.0500 | ND | " | |

North Creek Analytical - Bothell

*Refer to end of report for text of notes and definitions.

Joy B Chang, Project Manager



| | | |
|---|---|--|
| Fluor Daniel - GTI, Inc. - Alaska 900 W 5th Avenue, Suite 300 Anchorage, AK 99501 | Project: Chevron #9-1252 Project Number: 105702.01 Project Manager: Brennen Fleener | Sampled: 8/17/98 Received: 8/19/98 Reported: 8/26/98 11:32 |
|---|---|--|

**Gasoline Hydrocarbons (2-Methylpentane to 1,2,4-Trimethylbenzene) and BTEX by EPA 8015M and 8021B
North Creek Analytical - Bothell**

0128

| Analyte | Batch Number | Date Prepared | Date Analyzed | Surrogate Limits | Reporting Limit | Result | Units | Notes* |
|----------------------------------|--------------|---------------|---------------|--------------------------|-----------------|--------|---------------------|--------|
| <u>BH2-40 (continued)</u> | | | | <u>B808315-05</u> | | | <u>Soil</u> | |
| Toluene | 0880509 | 8/19/98 | 8/25/98 | | 0.0500 | ND | mg/kg dry | |
| Ethylbenzene | " | " | " | | 0.0500 | ND | " | |
| Xylenes (total) | " | " | " | | 0.100 | ND | " | |
| Surrogate: 4-BFB (FID) | " | " | " | 50.0-150 | | 96.7 | % | |
| Surrogate: 4-BFB (PID) | " | " | " | 50.0-150 | | 102 | " | |
| <u>BH2-40a</u> | | | | <u>B808315-06</u> | | | <u>Soil</u> | |
| Gasoline Range Hydrocarbons | 0880509 | 8/19/98 | 8/20/98 | | 5.00 | ND | mg/kg dry | |
| Benzene | " | " | " | | 0.0500 | ND | " | |
| Toluene | " | " | " | | 0.0500 | ND | " | |
| Ethylbenzene | " | " | " | | 0.0500 | ND | " | |
| Xylenes (total) | " | " | " | | 0.100 | ND | " | |
| Surrogate: 4-BFB (FID) | " | " | " | 50.0-150 | | 97.1 | % | |
| Surrogate: 4-BFB (PID) | " | " | " | 50.0-150 | | 103 | " | |
| <u>TRIP BLANK</u> | | | | <u>B808315-07</u> | | | <u>Water</u> | |
| Gasoline Range Hydrocarbons | 0880581 | 8/21/98 | 8/21/98 | | 50.0 | ND | ug/l | |
| Benzene | " | " | " | | 0.500 | ND | " | |
| Toluene | " | " | " | | 0.500 | ND | " | |
| Ethylbenzene | " | " | " | | 0.500 | ND | " | |
| Xylenes (total) | " | " | " | | 1.00 | ND | " | |
| Surrogate: 4-BFB (FID) | " | " | " | 50.0-150 | | 119 | % | |
| Surrogate: 4-BFB (PID) | " | " | " | 50.0-150 | | 110 | " | |
| <u>DECON RINSATE</u> | | | | <u>B808315-08</u> | | | <u>Water</u> | |
| Gasoline Range Hydrocarbons | 0880581 | 8/21/98 | 8/21/98 | | 50.0 | ND | ug/l | |
| Benzene | " | " | " | | 0.500 | ND | " | |
| Toluene | " | " | " | | 0.500 | ND | " | |
| Ethylbenzene | " | " | " | | 0.500 | ND | " | |
| Xylenes (total) | " | " | " | | 1.00 | ND | " | |
| Surrogate: 4-BFB (FID) | " | " | " | 50.0-150 | | 118 | % | |
| Surrogate: 4-BFB (PID) | " | " | " | 50.0-150 | | 119 | " | |



NORTH CREEK ANALYTICAL

Environmental Laboratory Services

BOTHELL ■ (425) 420-9200 ■ FAX 420-9210
 SPOKANE ■ (509) 924-9200 ■ FAX 924-9290
 PORTLAND ■ (503) 906-9200 ■ FAX 906-9210

| | | |
|---|---|--|
| Fluor Daniel - GTI, Inc. - Alaska 900 W 5th Avenue, Suite 300 Anchorage, AK 99501 | Project: Chevron #9-1252 Project Number: 105702.01 Project Manager: Brennen Fleener | Sampled: 8/17/98 Received: 8/19/98 Reported: 8/26/98 11:32 |
|---|---|--|

Dry Weight Determination North Creek Analytical - Bothell

0129

| Sample Name | Lab ID | Matrix | Result | Units |
|-------------|------------|--------|--------|-------|
| BH1-20 | B808315-01 | Soil | 92.8 | % |
| BH1-25 | B808315-02 | Soil | 92.4 | % |
| BH1-25a | B808315-03 | Soil | 92.9 | % |
| BH2-15 | B808315-04 | Soil | 90.8 | % |
| BH2-40 | B808315-05 | Soil | 94.5 | % |
| BH2-40a | B808315-06 | Soil | 95.5 | % |

North Creek Analytical - Bothell

Joy B Chang, Project Manager

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 PORTLAND ■ (503) 906-9200 ■ FAX 906-9210

| | | |
|---|---|--|
| Fluor Daniel - GTI, Inc. - Alaska 900 W 5th Avenue, Suite 300 Anchorage, AK 99501 | Project: Chevron #9-1252 Project Number: 105702.01 Project Manager: Brennen Fleener | Sampled: 8/17/98 Received: 8/19/98 Reported: 8/26/98 11:32 |
|---|---|--|

Gasoline Hydrocarbons (2-Methylpentane to 1,2,4-Trimethylbenzene) and BTEX by EPA 8015M and 8021B/Quality Control
North Creek Analytical - Bothell

0130

| Analyte | Date Analyzed | Spike Level | Sample Result | QC Result | Reporting Limit Units | Recov. % | RPD Limit | RPD % | Notes* |
|-----------------------------|---------------|-------------------------------|---------------|--|-----------------------|----------|-----------|-------|--------|
| Batch: 0880509 | | Date Prepared: 8/19/98 | | Extraction Method: EPA 5030B (MeOH) | | | | | |
| Blank | | 0880509-BLK1 | | | | | | | |
| Gasoline Range Hydrocarbons | 8/19/98 | | | ND | mg/kg dry | 5.00 | | | |
| Benzene | " | | | ND | " | 0.0500 | | | |
| Toluene | " | | | ND | " | 0.0500 | | | |
| Ethylbenzene | " | | | ND | " | 0.0500 | | | |
| Xylenes (total) | " | | | ND | " | 0.100 | | | |
| Surrogate: 4-BFB (FID) | " | 4.00 | | 4.08 | " | 50.0-150 | 102 | | |
| Surrogate: 4-BFB (PID) | " | 4.00 | | 4.19 | " | 50.0-150 | 105 | | |
| LCS | | 0880509-BS1 | | | | | | | |
| Gasoline Range Hydrocarbons | 8/19/98 | 25.0 | | 23.3 | mg/kg dry | 70.0-130 | 93.2 | | |
| Surrogate: 4-BFB (FID) | " | 4.00 | | 4.09 | " | 50.0-150 | 102 | | |
| Duplicate | | 0880509-DUP2 | | B808316-01 | | | | | |
| Gasoline Range Hydrocarbons | 8/20/98 | | ND | ND | mg/kg dry | | | 50.0 | |
| Surrogate: 4-BFB (FID) | " | 5.35 | | 5.15 | " | 50.0-150 | 96.3 | | |
| Matrix Spike | | 0880509-MS1 | | B808314-03 | | | | | |
| Benzene | 8/20/98 | 0.751 | ND | 0.612 | mg/kg dry | 60.0-140 | 81.5 | | |
| Toluene | " | 0.751 | ND | 0.624 | " | 60.0-140 | 83.1 | | |
| Ethylbenzene | " | 0.751 | ND | 0.625 | " | 60.0-140 | 83.2 | | |
| Xylenes (total) | " | 2.25 | ND | 1.88 | " | 60.0-140 | 83.6 | | |
| Surrogate: 4-BFB (PID) | " | 6.01 | | 5.68 | " | 50.0-150 | 94.5 | | |
| Matrix Spike Dup | | 0880509-MSD1 | | B808314-03 | | | | | |
| Benzene | 8/20/98 | 0.751 | ND | 0.624 | mg/kg dry | 60.0-140 | 83.1 | 20.0 | 1.94 |
| Toluene | " | 0.751 | ND | 0.657 | " | 60.0-140 | 87.5 | 20.0 | 5.16 |
| Ethylbenzene | " | 0.751 | ND | 0.657 | " | 60.0-140 | 87.5 | 20.0 | 5.04 |
| Xylenes (total) | " | 2.25 | ND | 1.98 | " | 60.0-140 | 88.0 | 20.0 | 5.13 |
| Surrogate: 4-BFB (PID) | " | 6.01 | | 5.90 | " | 50.0-150 | 98.2 | | |
| Batch: 0880581 | | Date Prepared: 8/21/98 | | Extraction Method: EPA 5030B (P/T) | | | | | |
| Blank | | 0880581-BLK1 | | | | | | | |
| Gasoline Range Hydrocarbons | 8/21/98 | | | ND | ug/l | 50.0 | | | |
| Benzene | " | | | ND | " | 0.500 | | | |
| Toluene | " | | | ND | " | 0.500 | | | |
| Ethylbenzene | " | | | ND | " | 0.500 | | | |
| Xylenes (total) | " | | | ND | " | 1.00 | | | |

North Creek Analytical - Bothell

*Refer to end of report for text of notes and definitions.

Joy B Chang, Project Manager

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| | | |
|---|---|--|
| Fluor Daniel - GTI, Inc. - Alaska 900 W 5th Avenue, Suite 300 Anchorage, AK 99501 | Project: Chevron #9-1252 Project Number: 105702.01 Project Manager: Brennen Fleener | Sampled: 8/17/98 Received: 8/19/98 Reported: 8/26/98 11:32 |
|---|---|--|

Gasoline Hydrocarbons (2-Methylpentane to 1,2,4-Trimethylbenzene) and BTEX by EPA 8015M and 8021B/Quality Control
North Creek Analytical - Bothell

0131

| Analyte | Date Analyzed | Spike Level | Sample Result | QC Result | Units | Reporting Limit Recov. Limits | Recov. % | RPD Limit | RPD % | Notes* |
|---------------------------------------|---------------|-------------|---------------|-----------|-------|-------------------------------|----------|-----------|-------|--------|
| Blank (continued) | | | | | | | | | | |
| <u>0880581-BLK1</u> | | | | | | | | | | |
| Surrogate: 4-BFB (FID) | 8/21/98 | 48.0 | | 57.6 | ug/l | 50.0-150 | 120 | | | |
| Surrogate: 4-BFB (PID) | " | 48.0 | | 57.6 | " | 50.0-150 | 120 | | | |
| LCS | | | | | | | | | | |
| <u>0880581-BS1</u> | | | | | | | | | | |
| Gasoline Range Hydrocarbons | 8/21/98 | 500 | | 470 | ug/l | 70.0-130 | 94.0 | | | |
| Surrogate: 4-BFB (FID) | " | 48.0 | | 68.5 | " | 50.0-150 | 143 | | | |
| Duplicate | | | | | | | | | | |
| <u>0880581-DUP1</u> <u>B808291-01</u> | | | | | | | | | | |
| Gasoline Range Hydrocarbons | 8/21/98 | | 4390 | 4010 | ug/l | | | 25.0 | 9.05 | |
| Surrogate: 4-BFB (FID) | " | 48.0 | | 64.1 | " | 50.0-150 | 134 | | | |
| Matrix Spike | | | | | | | | | | |
| <u>0880581-MS1</u> <u>B808315-08</u> | | | | | | | | | | |
| Benzene | 8/21/98 | 10.0 | ND | 10.6 | ug/l | 70.0-130 | 106 | | | |
| Toluene | " | 10.0 | ND | 10.6 | " | 70.0-130 | 106 | | | |
| Ethylbenzene | " | 10.0 | ND | 10.5 | " | 70.0-130 | 105 | | | |
| Xylenes (total) | " | 30.0 | ND | 33.1 | " | 70.0-130 | 110 | | | |
| Surrogate: 4-BFB (PID) | " | 48.0 | | 62.6 | " | 50.0-150 | 130 | | | |
| Matrix Spike Dup | | | | | | | | | | |
| <u>0880581-MSD1</u> <u>B808315-08</u> | | | | | | | | | | |
| Benzene | 8/21/98 | 10.0 | ND | 10.6 | ug/l | 70.0-130 | 106 | 15.0 | 0 | |
| Toluene | " | 10.0 | ND | 10.6 | " | 70.0-130 | 106 | 15.0 | 0 | |
| Ethylbenzene | " | 10.0 | ND | 10.5 | " | 70.0-130 | 105 | 15.0 | 0 | |
| Xylenes (total) | " | 30.0 | ND | 33.2 | " | 70.0-130 | 111 | 15.0 | 0.905 | |
| Surrogate: 4-BFB (PID) | " | 48.0 | | 62.4 | " | 50.0-150 | 130 | | | |

Joy B Chang, Project Manager





**NORTH
CREEK
ANALYTICAL**
Environmental Laboratory Services

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SPOKANE ▪ (509) 924-9200 ▪ FAX 924-9290
PORTLAND ▪ (503) 906-9200 ▪ FAX 906-9210

| | | |
|---|---|--|
| Fluor Daniel - GTI, Inc. - Alaska 900 W 5th Avenue, Suite 300 Anchorage, AK 99501 | Project: Chevron #9-1252 Project Number: 105702.01 Project Manager: Brennen Fleener | Sampled: 8/17/98 Received: 8/19/98 Reported: 8/26/98 11:32 |
|---|---|--|

Notes and Definitions

0132

| # | Note |
|---|------|
|---|------|

- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- Recov. Recovery
- RPD Relative Percent Difference

Joy B Chang, Project Manager



LAB RELEASE # 6051381

Work Order # B808315

CHAIN OF CUSTODY REPORT

| | | | | | |
|--|--------------------|-------------------------------------|--|-----------------|--------------|
| REPORT TO: FLOUR DANIEL-GTI, INC.-ALASKA | | | INVOICE TO: CHEVRON U.S.A PRODUCTS | | |
| ATTENTION: | | | ATTENTION: BOB COCHRANE | | |
| ADDRESS: 900 W 5th AVE., SUITE 300 ANCHORAGE, AK 99501 | | | ADDRESS: P.O. Box 5004 SAN RAMON CA 94583-0804 | | |
| PHONE: 907-265-4462 | | FAX: 907-276-4480 | P.O. NUMBER: | | NCA QUOTE #: |
| PROJECT NAME: CHEVRON # 9-1252 | | | Analysis Request: <i>BYE to BOB COCHRANE</i> | | |
| PROJECT NUMBER: 105702.01 | | | | | |
| SAMPLED BY: | | | TURNAROUND REQUEST in Business Days * | | |
| CLIENT SAMPLE IDENTIFICATION | SAMPLING DATE/TIME | NCA SAMPLE ID (Laboratory Use Only) | <input type="checkbox"/> 10 Standard <input type="checkbox"/> 7 <input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1 Same Day <input checked="" type="checkbox"/> 3-4 <input type="checkbox"/> 2 <input type="checkbox"/> 1 Same Day <input type="checkbox"/> OTHER Specify: _____ | | |
| 1 BH1-20 | 8/17/98 1020 | B808315-01 | * Turnaround Requests less than standard may incur Rush Charges. | | |
| 2 BH1-25 | " 1030 | -02 | MATRIX (W, S, A, O) | # OF CONTAINERS | COMMENTS |
| 3 BH1-25a | " 1030 | -03 | S | 2 | |
| 4 BH2-15 | " 1530 | -04 | S | 2 | |
| 5 BH2-40 | " 1615 | -05 | S | 2 | |
| 6 BH2-40a | " 1615 | -06 | S | 1 | |
| 7 TRIP BLANK | " | -07 | W | 2 | |
| 8 DECON RINSATE | " 1630 | -08 | W | 2 | |
| NOTHING FOLLOWS | | | | | |

| | | | | | |
|--|------------------------|---------------|---|-----------|---------------|
| RELINQUISHED BY (Signature): <i>Lisa Nicholson</i> | | DATE: 8-18-98 | RECEIVED BY (Signature): <i>Federal Express</i> | | DATE: 8-18-98 |
| PRINT NAME: Lisa Nicholson | FIRM: Fluor Daniel GTI | TIME: | PRINT NAME: | FIRM: | TIME: |
| RELINQUISHED BY (Signature): <i>Feed Ex</i> | | DATE: | RECEIVED BY (Signature): <i>Cathy Nichols</i> | | DATE: 6/18/98 |
| PRINT NAME: | FIRM: | TIME: | PRINT NAME: Cathy Nichols | FIRM: NCA | TIME: 9:00 |

ADDITIONAL REMARKS:

2-7-98

0133

PAGE OF