Science Applications International Corporation
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September 23, 2003
Project SAIC 11467

Mr. Bill Janes
Alaska Department of Environmental Conservation
410 Willoughby Avenue, Suite 105
Juneau, Alaska 99801-1795

Re: ***Additional Soil Assessment and Excavation Workplan***
Delta Western/Former Chevron Bulk Plant 1001467
1417 Peninsula Street
Wrangell, Alaska

Dear Mr. Janes:

This letter, prepared on behalf of Chevron Environmental Management Company (ChevronTexaco) and Delta Western by Science Applications International Corporation (SAIC), presents a site characterization workplan for the referenced site. The purpose of this workplan is to assess soil conditions in areas within the Delta Western bulk fuel terminal prior to liner installation, perform limited soil excavation, and conduct additional soil sampling to assist in calculating site-specific cleanup goals.

This workplan was prepared at the direction of the Alaska Department of Environmental Conservation (ADEC). Further detail on this proposed scope of work is presented below. Included in this workplan are discussions of site background, scope of work, and report preparation.

SITE LOCATION AND BACKGROUND

The site is an operating Delta Western Terminal located at 1417 Peninsula Street in Wrangell, Alaska(Figures 1 and 2). The site was developed as a fuel storage facility in the late 1930's and has operated in that capacity to the present. Site facilities have not significantly changed since original construction. These facilities include eight above ground storage tanks (ASTs), which contain aviation gasoline, jet fuel, unleaded gasoline, supreme unleaded gasoline, diesel, and pre-mix gasoline. There is one underground storage tank (UST), which holds heating fuel for the site's shower house. Other site facilities include a fuel loading rack, pump house, a marine fueling dock servicing the Wrangell Harbor, several covered and uncovered drum storage areas, and office and warehouse buildings. Site facilities are shown on Figure 2.

The site is located on Point Shekesti at an elevation of approximately 35 to 40 feet above mean sea level. The site topography drops off steeply to the east into the Wrangell Harbor and gently to the west into the tidelands of Zimovia Strait. Topography to the north of the tank farm rises steeply to a flat cut terrace where the Wrangell Oil Bulk Terminal tank farm is located. The site slopes gently to the south along Peninsula Street. Local groundwater flow is inferred to follow topography.

Based on field observations the site is underlain by unconsolidated imported fine- and coarse-grained fill material and crushed rock. Exposures of dark gray to black schist and gneiss bedrock are exposed along the shoreline to the east and west of the site. The nearest surface water is the Wrangell Harbor, located immediately east and adjacent to the site. The tidelands of Zimovia Strait are located approximately 310 feet west of the site's tank farm.

Previous Investigations

Previous environmental assessment work in the vicinity of the site has been performed by James Clare and RRM.

On September 30 and October 1, 1999, RRM, on behalf of ChevronTexaco and Delta Western, supervised the excavation of ten test pits (TP-1 through TP-10) and advancement of six soil borings (B-1 through B-6) at locations on Delta Western property and the adjacent David Mork property for the purpose of soil and groundwater sample collection and analyses (Figure 2). Groundwater was encountered at depths ranging from less than 1 foot below ground surface (bgs) to 4 feet bgs. Subsurface material ranged from sandy and gravelly fill with mixed debris to native muskeg, silt, sand, gravel, and schist bedrock. Soil and groundwater samples were analyzed for gasoline-range organics (GRO), diesel-range organics (DRO), residual-range organics (RRO), and benzene, toluene, ethyl benzene, and xylenes (BTEX). Laboratory analyses of soil samples indicated GRO, DRO, and RRO concentrations as high as 108 parts per million (ppm) (TP-9), 19,100 ppm (TP-5), and 3,640 ppm (TP-5), respectively. Benzene was only detected in the sample collected from TP-4 at a concentration of 0.496 ppm.

Results of groundwater analyses indicated detected concentrations of GRO, DRO, and RRO as high as 161,000 parts per billion (ppb) (B-2), 936,000 ppb (B-2), and 4,570 ppb (TP-3), respectively. Benzene was detected in groundwater samples collected from test pits TP-1, TP-4, and TP-5 at concentrations of 1.70 ppb, 8.12 ppb, and 2.33 ppb, respectively. Results of this investigation are presented in a report titled *Soil and Groundwater Investigation Results,* prepared by RRM and dated November 22, 1999.

On July 19 and 20, 2000, James Clare performed soil sampling activities on behalf of Wrangell Oil at locations designated SS1 through SS6 on Figure 2. A total of nine soil samples were submitted for laboratory analyses of DRO. Two composite samples from SS4 and SS5 were submitted for analyses of GRO. Laboratory results indicated concentrations of DRO ranging from 411 ppm in Sample SS4 (3.5 feet bgs) to 5,340 ppm in Sample SS2 (0.67 feet bgs). GRO

were detected in composite samples from SS4 and SS5 at concentrations of 209 ppm and 56.6 ppm, respectively. Results of this investigation are presented in a report titled *Site Soil Screening Characterization Report*, prepared by James Clare and dated September 2000.

During June and July 2001, Greg Scheff and Associates of Wrangell, Alaska, performed a survey of surface and bedrock topography across properties owned by Wrangell Oil, Delta Western, David Mork, and Elmer Mork. The purpose of the survey was to aid in understanding the nature of groundwater and potential petroleum hydrocarbon migration over surficial and bedrock interfaces across these properties.

In October 2001, RRM performed excavation of 18 test pits for the purpose soil sampling and subsequent groundwater monitoring well installation. A total of nine test pits were completed as groundwater monitoring wells. The results of this investigation are presented in RRM's *Additional Site Characterization Report*, dated June 19, 2002. DRO concentrations in soil were found above 10X Table C values in the area between Wrangell Oil and Delta Western properties and south of the Delta Western tank farm (Figure 2). Elevated DRO concentrations in soil during this investigation were detected at 4,520 ppm in Test Pit P-7 at 2.0 feet to 7,860 ppm in Test Pit P-18 at 2.5 feet.

SCOPE OF WORK

The following scope of work is intended to further assess soil conditions in areas within Delta Western bulk fuel terminal prior to liner installation, perform limited soil excavation, and conduct additional soil sampling relative to calculating site-specific cleanup goals. Field and laboratory procedures are described in Attachment A.

Prefield Activities

Prior to conducting any below-ground work, the work locations will be marked and the Locate Call Center of Alaska and City of Wrangell Public Works Department and Delta Western will be notified for underground utility clearance. A site-specific health and safety plan will be prepared for the field work in accordance to the Occupational Safety and Health Administration guidelines. Additionally, SAIC will notify property owners prior to initiating field activities on adjoining private properties.

Tank Farm Sampling

A total of eleven sample locations are proposed within the bermed tank farm at the approximate locations shown on Figure 3. Small test pits will be excavated in areas within the tank farm using a small excavator (operated by Delta Western personnel and concurrently used for preparation of liner installation) to collect soil samples and logging information which will include lithologic descriptions, and the presence, if any, of petroleum hydrocarbon impact detectable by visual

inspection or field instrumentation. Soil samples will be collected vertically at 1.5 feet and 3 feet bgs, unless bedrock or groundwater is encountered first. Soil samples will be screened for petroleum hydrocarbons using a photo-ionization detector (PID) or similar device. If groundwater is encountered, a grab groundwater sample may be collected. Select soil and grab groundwater samples will be collected for laboratory analyses of GRO, DRO, and RRO by AK Methods 101, 102, and 103, respectively, and BTEX compounds by EPA Method 8021B.

Remedial Soil Excavation

The proposed soil excavation is intended to address levels of DRO in soil that exceed both the ADEC Method 2 Soil Cleanup Levels for ingestion (8,250 ppm) and inhalation (12,500 ppm), and the 10X Table C soil cleanup level of 2,300 ppm for the protection of groundwater.

As noted in the June 19, 2002 *Additional Site Characterization Report,* the DRO concentration of 19,100 ppm detected in soil sample TP-5, at 3.0 feet exceeds the ADEC Method 2 Soil Cleanup Levels for ingestion/inhalation. As shown on Figure 2, TP-5 is located along the property boundary between the Delta Western Terminal and the David Mork Property. In order to remediate concentrations of DRO above the ingestion and inhalation cleanup levels and 10X Table C soil clean up level, SAIC will implement soil excavation in the area of Test Pit TP-5.

An initial round of confirmation soil samples will be collected from the area of excavation and sent to a state-certified laboratory for rush DRO analyses by method AK 102. Confirmation samples associated with remedial excavation activities will be collected at least every 15 lateral feet from the excavation bottom and sidewalls. Based on these results, additional excavation and confirmation soil sampling may be performed prior to backfilling and liner installation. Excavated soils will be temporarily stockpiled on and under visqueen plastic pending further excavation activities in 2003 that may be required.

Organic Carbon Analyses

In order to develop a site-specific cleanup goal for DRO in soil in and around the Mork properties (Figure 2), a minimum of eight soil samples will be collected in and around the vicinity of test pits P-3 and P-7 and analyzed for organic carbon fraction (f_{oc}) site-specific soil cleanup level determination. Select soil samples will be collected at varied depths and analyzed for f_{oc} by EPA Method 9060M, DRO by Method AK 102, and RRO by Method AK103. Based on the results of these analyses, a site-specific cleanup goal will be developed in order to determine to what areas of DRO-impacted soil, if any, need to be remediated.

Report Preparation

A technical report will be prepared to document the results of the sampling and remedial excavation activities. The report will also include the results of a concurrent groundwater monitoring event. The report will present a discussion of the site background, scope of work, findings, conclusions and recommendations. Additionally, analytical tables, a site map, a

groundwater elevation contour map, soil concentration map, field and laboratory procedures, field data sheets, analytical data and chain-of-custody documentation will be included.

IMPLEMENTATION SCHEDULE

SAIC is prepared to implement the proposed scope of work upon approval of this workplan by ADEC staff, and notice to proceed by ChevronTexaco. SAIC is tentatively scheduled to initiate field work in September 2003.

Please do not hesitate to call SAIC with any questions or comments regarding this workplan at (831) 475-8141.

Sincerely,

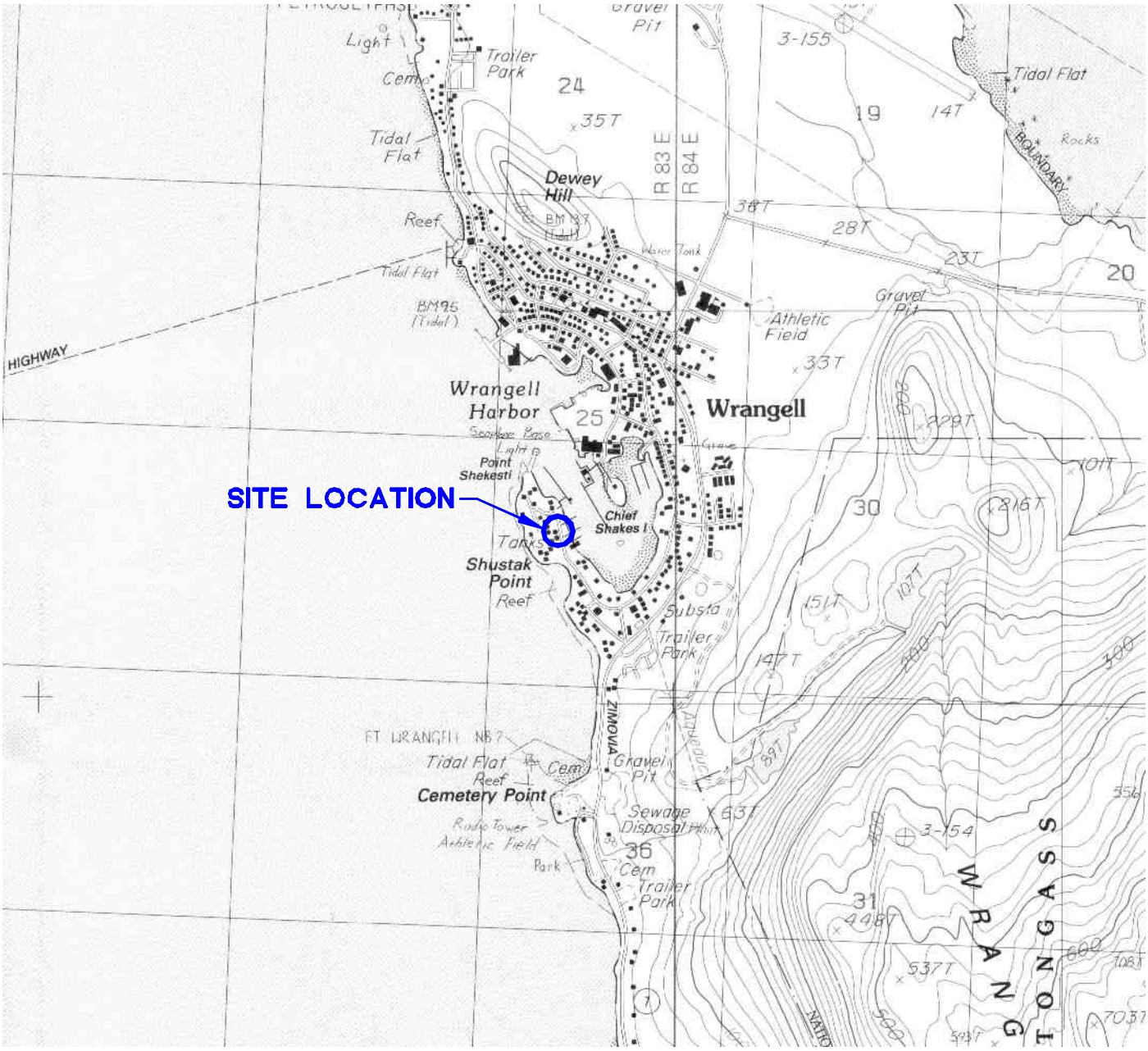
SCIENCE APPLACATIONS INTERNATIONAL CORPORATION

Terry Gyrion
Project Geologist

Joe Muzzio, R.G.
Program Manager

Attachments: Figure 1 – Site Location Map
Figure 2 – DRO Concentrations in Soil
Figure 3 – Proposed Sample Location Map
Attachment A – Field and Laboratory Procedures

cc: Mr. Tom Bauhs, ChevronTexaco, 6001 Bollinger Canyon Road - Building L San Ramon, California 94583 (1 Copy)
Mr. Jim Soriano, Delta Western, 4601 Shilshole Avenue NW, Seattle, WA 98107 (1 Copy)
Mr. John Wickman, Delta Western, 1417 Peninsula Street, Wrangell, AK 99929 (1 Copy)
Mr. David Mork, 7520 West Willamette Drive, Kennewick, WA 99336 (1 Copy)
Mr. And Mrs. Elmer Mork, 1404 Peninsula Street, Wrangell, AK 99929 (1 Copy)



QUADRANGLE LOCATION

N

SCALE (ft)

0 2,083

Ref. AA71/SLM.dwg
Base Map from USGS, Petersburg (B-2) NE, Alaska Quad., Revised 1992

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SITE LOCATION MAP

DELTA WESTERN / FORMER CHEVRON
BULK TERMINAL #1001467
1417 Peninsula Street
Wrangell, Alaska

FIGURE:
1
PROJECT:
11467

SCALE IN FEET

0 40

EXPLANATION

- PROPERTY BOUNDARY
- MONITORING WELL LOCATION
- TEST PIT LOCATION
- SEEP LOCATION
- SS2 ⊕ SOIL SAMPLE LOCATION, JAMES CLARE (7/00)
- B-3 HAND OR POWER AUGER SOIL BORING, RRM (10/01/99)
- TP-6 EXCAVATION TEST PIT FOR SOIL AND GRAB GROUNDWATER SAMPLE COLLECTION, RRM (9/30/99)
- APPROXIMATE SHORELINE
- 8.78 DRO CONCENTRATIONS IN SOIL IN PARTS PER MILLION (ppm) SAMPLED BETWEEN 10/23/01-10/28/01
- DRO DIESEL RANGE ORGANICS
- < NOT DETECTED AT OR ABOVE REPORTING LIMIT SHOWN
- NA NOT ANALYZED
- 1.5' DEPTH OF SAMPLE
- * SAMPLE RE-ANALYZED DUE TO POOR QA/QC RESULTS

SSBG	DEPTH	DRO
	3.5'	449

SS5	DEPTH	DRO
	0.67'	1,410
	4.5'	4,000

SS4	DEPTH	DRO
	2.5'	1,290
	3.5'	411

SS6	DEPTH	DRO
	1.67'	425

SS2	DEPTH	DRO
	0.67'	5,640

SS1	DEPTH	DRO
	2.0'	606

SS3	DEPTH	DRO
	2.5'	2,030

	DEPTH	DRO
	2.0'	16,000

	DEPTH	DRO
	1.5'	12,700

P-17	DEPTH	DRO
	2.0'	63.6
	2.0'	38.2*

P-16/MW-9	DEPTH	DRO
	1.5'	10.3
	1.5'	8.94*

P-15	DEPTH	DRO
	2.0'	357
	4.2'	43.6

P-18/MW-8	DEPTH	DRO
	2.5'	7,880
	5.3'	1,110

P-14	DEPTH	DRO
	2.5'	<4.00
	5.1'	<4.00

P-13	DEPTH	DRO
	2.5'	4,370
	5.2'	3,390

P-12	DEPTH	DRO
	2.5'	4.32
	5.0'	<4.00
	7.5'	<4.00

P-11/MW-7	DEPTH	DRO
	2.0'	16.4
	4.0'	32.3
	6.5'	<4.00

	DEPTH	DRO
	1.0'	12.6

TP-1	DEPTH	DRO
	1.0'	406

P-9/MW-6	DEPTH	DRO
	2.0'	9.36
	4.1'	<4.00

P-10	DEPTH	DRO
	2.0'	10.6
	4.0'	24.4
	7.0'	7.70

TP-2	DEPTH	DRO
	1.5'	49.7

TP-3	DEPTH	DRO
	3.5'	1,360

TP-5	DEPTH	DRO
	3.0'	19,100

TP-6	DEPTH	DRO
	1.5'	1,960

TP-8	DEPTH	DRO
	2.0'	15.5

TP-9	DEPTH	DRO
	3.0'	2,880

P-8	DEPTH	DRO
	2.0'	829
	4.0'	187
	6.0'	4.30

P-7/MW-3	DEPTH	DRO
	2.0'	4,520
	4.0'	597
	6.4'	7.15

P-4	DEPTH	DRO
	2.0'	183
	4.0'	21.8

	DEPTH	DRO
	1.5'	2,240
	3.5'	13.2

P-6/MW-1	DEPTH	DRO
	2.5'	7.77

P-5/MW-2	DEPTH	DRO
	2.0'	1,840
	4.0'	18.0
	6.0'	9.61

P-3A/MW-4	DEPTH	DRO
	4.0'	639

P-1/MW-5	DEPTH	DRO
	1.3'	8.78
	5.0'	<4.00

P-2	DEPTH	DRO
	1.5'	104

WRANGELL OIL TANK FARM
CONCRETE RETAINING WALL
275 GALLON ABOVE GROUND HEATING OIL TANK
TRUCK TRAILER LOADING RACK (TTLR)
GARAGE
DELTA WESTERN FORMER CHEVRON BULK TERMINAL
CENTERLINE TOP OF DIKE
TANK #10
TANK #1
TANK #4
TANK #2
TANK #5
TANK #3
TANK #9
CONC RETAINING WALL
1-1/2" water line
TTLR
PIPE CROSSING
PROPOSED LOCATION OF TEMPORARY STOCKPILE
ZIMOVIA STRAIT
ELMER MORK HOUSE
DECK
WOOD SHED
SHED
CONC WALK
CARPORT
DAVE MORK HOUSE
OIL TANK
SHED
FORMER RENTAL HOUSE
DRIVEWAY
CONNEX
DAVE HARTUNG FLOAT HOUSE
SEEP-1
SEEP-2
CARPORT
WAREHOUSE
CARPORT
WAREHOUSE
PARKING
SIDEWALK
PENINSULA STREET
PARKING AREA
BUILDING

Ref. AA71/extendoC.dwg
Basemap from aerial photograph from Aeromap U.S. 7/26/98, Scale 1"=100'

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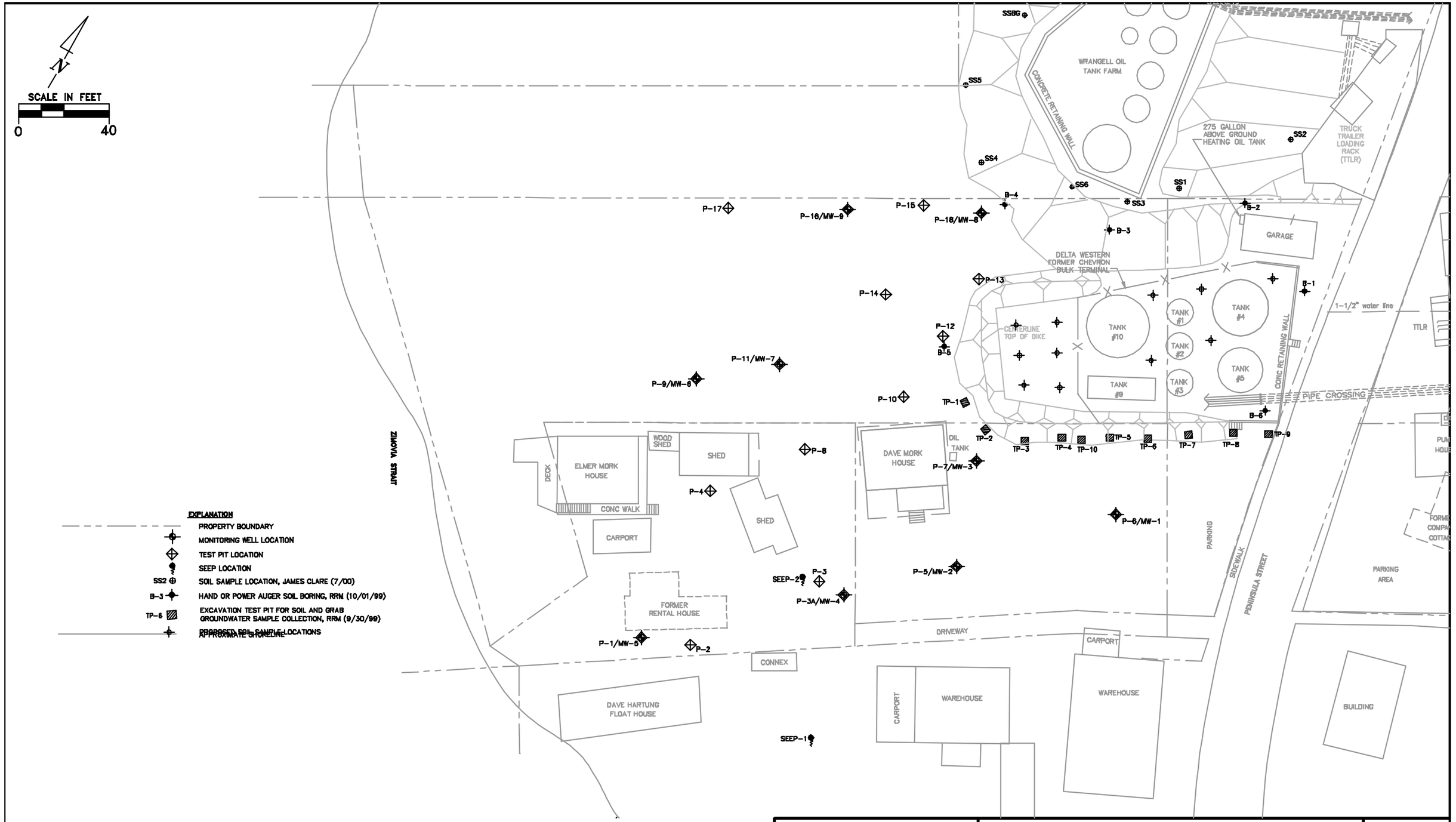
DRO CONCENTRATIONS IN SOIL

DELTA WESTERN / FORMER CHEVRON BULK TERMINAL #1001467
1417 Peninsula Street
Wrangell, Alaska

FIGURE: 2
PROJECT: 11467



Ref. AA71/extendoC.dwg
Basemap from aerial photograph from Aeromap U.S. 7/28/98, Scale 1"=100'

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PROPOSED SAMPLE LOCATION MAP

DELTA WESTERN / FORMER CHEVRON BULK TERMINAL #1001467
1417 Peninsula Street
Wrangell, Alaska

FIGURE: **3**
PROJECT: 11467

ATTACHMENT A
FIELD AND LABORATORY PROCEDURES

ATTACHMENT A
FIELD AND LABORATORY PROCEDURES

Soil Sampling Procedures

Test pits will be advanced using a backhoe or small excavator in order to allow for soil sample collection and lithologic description. Soil samples will be collected vertically at 1.5-foot depth intervals during excavation to the desired depth or until groundwater or bedrock is encountered. Confirmation samples associated with remedial excavation activities will be collected at least every 15 lateral feet from the excavation bottom and sidewalls. Field hydrocarbon screening procedures consist of measuring organic vapor concentrations using a photo-ionization detector (PID). The field screening sample will be prepared by obtaining approximately 30 grams of soil and placing it into a clean container. The container will then be sealed and warmed for approximately 20 minutes before testing the headspace for organic vapor, measured in ppmv as isobutylene. The instrument will be calibrated prior to use in the field. Soil samples for laboratory analyses will be collected by placing soil into appropriate EPA-approved glass containers supplied by the laboratory. The soil samples will then be placed in cold storage and transported to an Alaska state-certified laboratory, accompanied by chain-of-custody documentation.

Laboratory Procedures

Selected soil and grab groundwater samples will be submitted to the laboratory and analyzed for the presence of gasoline range organics (GRO) using Method AK101; diesel range organics (DRO) using Method AK102; and residual range organics (RRO) using Method AK103, and benzene, toluene, ethyl benzene and xylenes (BTEX) by EPA Method 8021B. Select soil samples will be analyzed for organic carbon fraction (f_{oc}) by EPA Method 9060M. All analyses will be performed by an Alaska state-certified laboratory.