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GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

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Davidson Inc.
1551 LaRue Lane
Fairbanks, Alaska 99709

Attn: Ms. Janie Feist

RE: RELEASE INVESTIGATION REPORT, 230 OLD STEESE HIGHWAY, FACILITY #2742, FAIRBANKS, ALASKA

In accordance with the Alaska State Underground Storage Tank (UST) Financial Assistance Program we present this Release Investigation (RI) report for ongoing groundwater assessment corrective action at 230 Old Steese Highway in Fairbanks, Alaska. We have been involved with site characterization and remediation activities at this location since 1993, and have operated an air injection/vapor extraction system (AI/VES) to remediate soil and groundwater at the site since January 1995. The objective of this RI report is to provide an interpretation of off-site groundwater and Noyes Slough water quality and continued trends in on-site water quality. A conceptual site model (CSM) is presented that describes contaminant source, pathways, and receptors. The water quality data and CSM are used to support our conclusions and recommendations for further corrective actions at the site. This report relies on previously collected and reported data.

This work was performed in general accordance with the Alaska Department of Environmental Conservation (ADEC) continuing cleanup Grant 15274231. This grant provided for operation and maintenance (O&M) of the AI/VES for 12 months, installing and sampling off-site temporary well points, installing and sampling two off-site permanent monitoring wells, semiannual groundwater and Noyes Slough monitoring and water quality reporting, preparing this RI report, and preparing an annual AI/VES operation and maintenance report. Of these tasks, only the annual operation and maintenance report remains to be completed. Ongoing operation of the AI/VES is also active under Grant 15274231.

31-1-11076-064

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BACKGROUND

Shannon & Wilson began work at the site in 1993 with soil boring and monitoring well installation and soil sampling as part of a UST site assessment and RI. A records review was included in the site assessment to identify previous land uses or other activities that could have contributed to contamination at the site. This work was documented in the May 4, 1993, *Results of Initial Site Assessment and Release Investigation, US Travel Site, 230 Old Steese Highway, Fairbanks, Alaska.*

Based on the recollection of the site owner, the UST system formerly located at the site had been removed sometime prior to 1983 without documentation or sampling, and the excavation was backfilled with clean gravel. A 500-gallon used-oil UST remained at the site and was removed in 1994, as documented in *Underground Storage Tank Closure, US Travel Site, 230 Old Steese Highway, Fairbanks, Alaska, Site No. 2742*, dated August 19, 1994.

The AI/VES was designed and installed in 1994, began operation on January 20, 1995, and has since been operated on a continuous basis. The installation and ongoing operation of this system has been documented in several annual progress reports. Appendix A provides a listing of reports prepared by Shannon & Wilson for the 230 Old Steese Highway site. Groundwater monitoring has been conducted as documented in the reports also listed in Appendix A.

Additional work was done in the summer of 2001 to further assess water quality at the 230 Old Steese Highway property and adjacent off-site locations. This work included the installation and sampling of eight temporary well points downgradient from the 230 Old Steese site (Figure 2). These water quality results were reported in the *Results of Monitoring Well and Temporary Well Point Sampling, 230 Old Steese Highway, Facility #2742, Fairbanks, Alaska*, dated January 18, 2002.

Monitoring wells MW-9 and MW-10 were subsequently installed at two of these well point locations (Figure 2) in consultation with the ADEC.

Surface water samples were collected from each of two locations on Noyes Slough in July 2001 and August 2002. These samples were analyzed for volatile organic compounds (VOCs) (both events) and gasoline range organic (GRO) (August 2002 only).

The most recent groundwater sampling event at the site was conducted in August 2002, the results of which have been reported in the *Results of Semiannual Groundwater Quality Monitoring, 230 Old Steese Highway, Facility #2742, Fairbanks, Alaska*, dated January 15, 2003. That sampling event included the collection of additional samples from each well for geochemical analyses. Results of the geochemical testing were used to calculate the assimilative capacity of the aquifer and, by extension, its ability to degrade petroleum hydrocarbons remaining in groundwater at the site.

GROUNDWATER QUALITY

Groundwater samples have been collected at the site routinely since June 1993, and analyzed for benzene, toluene, ethylbenzene, and xylenes (BTEX) and other VOCs. GRO analyses have been performed on the samples since 2000. The historical results of the groundwater analyses are presented in Table 1 (BTEX and GRO), Table 2 (VOCs), and Table 3 (2001 temporary well-point data).

On-site Groundwater Quality

High concentrations of BTEX compounds, as well as some other VOCs (including some chlorinated compounds), were detected in the on-site wells early in this effort. These concentrations decreased significantly during the first three years of AI/VES remediation system operation. Using benzene as an indicator of water quality at the site, concentrations of petroleum hydrocarbons have been fluctuating since early 1999. A comparison of groundwater depths to contaminant concentrations did not show any apparent causal relationship. While the treatment system continues to remove VOCs from subsurface soils, this suggests it has reached the practical limits of its effectiveness. Air quality data collected from the VES exhaust since 1995 supports this conclusion.

Based on results of the August 2002 water sampling event, hydrocarbon removal efficiencies of 98.9 percent to 99.9 percent have been achieved in on-site monitoring wells MW-1, MW-2, MW-3, MW-4, and MW-6. However, benzene concentrations in these wells (except MW-1) continue to exceed ADEC groundwater cleanup levels.

Based on the assimilative capacity estimates presented in our January 15, 2003, water quality report, and the GRO and VOC data for the August 2002 sample sampling event, there does not appear to be an adequate abundance of oxidant present to support microbial degradation of the measured hydrocarbon contamination in the wells where GRO were detected (MW-2, MW-3, MW-4 , MW-6, and MW-9). The GRO assimilative capacity ranged from 3 to 47 milligrams per liter (mg/L), and GRO was detected at concentrations ranging from 255 (MW-6) to 3,450 mg/L (MW-4). At these locations, assuming no recharge of oxidants from upgradient or other sources, microbial metabolism of the hydrocarbon contaminants present would be limited by availability of electron acceptors.

Floating petroleum product was observed in monitoring wells MW-1 through MW-5 in our initial assessment in 1993, ranging in thickness from a sheen (MW-3) to 3.75 inches (MW-5). Our March 1994 water quality report noted a product layer 0.1 inch thick in MW-5 and a strong hydrocarbon odor in the other on-site wells. Our July 1994 water quality report noted a sheen and strong hydrocarbon odor in all of the wells sampled. Subsequent reports, beginning in February 1995, do not mention product in wells.

Off-site Groundwater Quality

Off-site groundwater has been sampled from two monitoring wells (MW-7 and MW-8) since July 1994 and from two additional monitoring wells installed in May 2002 (MW-9 and MW-10).

Benzene has been detected in all samples collected from both MW-7 and MW-8 but at widely varying concentrations. Well MW-7, located approximately 300 feet downgradient (west) of the site, has contained benzene at concentrations ranging from 1.1 µg/L to 66 µg/L. Well MW-8, located approximately 180 feet downgradient (northwest) of the site, has contained benzene at concentrations ranging from 1.14 µg/L to 4,000 µg/L. Toluene, ethylbenzene, and xylenes have also been detected in these wells but at concentrations below applicable cleanup levels.

Well MW-7 has been sampled for VOCs since December 2000 and has had low concentrations of tetrachloroethene (PCE) and one of its breakdown products in two of the three sampling events. Well MW-8 has been sampled for VOCs since its installation and has since had several chlorinated compounds and alkylated benzenes detected at various times. PCE exceeded its cleanup level in one sample (5.5 µg/L in August 1995), and 1,2 dichloroethane exceeded its

cleanup level in two samples (February and December 1995). The most recent samples from both of these wells (August 2002) were nondetect for all VOCs. GRO was detected in MW-7 and MW-8 at 68.7 µg/L and 1,580 µg/L, respectively, in December 2001. This was the first time these wells had been sampled for GRO.

The two new off-site monitoring wells were sampled twice in 2002, once in May following their installation and once in August with the other on-site wells. Well MW-9, located approximately 225 feet west southwest of the site, contained elevated concentrations of benzene and GRO (maximum 385 µg/L and 1,520 µg/L, respectively). Well MW-10, located approximately 225 feet west northwest of the site adjacent to Noyes Slough, contained low concentrations of benzene and was nondetect for GRO. Other VOCs detected in these wells included low concentrations of PCE, trichloroethene (TCE), and other chlorinated compounds.

The 2001 off-site temporary well-point installation and sampling activities showed benzene was present in groundwater throughout the area downgradient of the site. Benzene was detected at concentrations ranging from 2.8 µg/L to 520 µg/L, and exceeded its groundwater cleanup level in all but one of the sample locations. The only other VOC to exceed its cleanup level was PCE at one location adjacent to Burger King. Other VOCs detected in these well points included chlorinated compounds and alkylated benzenes.

Other contaminated sites have been identified in the vicinity of 230 Old Steese Highway. These sites include the Williams Express retail gasoline station, where groundwater remediation efforts are ongoing; a commercial printing business on the southeast corner of Second Street and Old Steese Highway; and a utility company pump station at the west end of Second Street, near off-site well MW-7. Corrective action was reportedly conducted at the utility pump station, and it is no longer on ADEC's list of active sites.

Noyes Slough

No contaminants have been detected in the two summer sampling events conducted in Noyes Slough. The two locations sampled during each event are roughly adjacent to monitoring wells MW-7 and MW-8 (Figure 2). The slough was found to be frozen solid during our attempts to collect surface water samples in February 2002.

Vapor Extraction Air Quality Monitoring

Emissions from the vapor extraction system have been routinely monitored since its startup by a combination of photoionization detector (PID) field screening, Drager ™ tube testing, and laboratory analysis. Data from this monitoring are presented in Table 4. PID field screening measurements ranged from approximately 680 parts per million (ppm) to 1,650 ppm during the system's first month of operation and declined steadily through early 2000. Emissions field screening measurements since 2000 have remained in the non-detect to low teens range. While the PID provides a qualitative measurement of volatile compounds present, Drager tubes offer compound-specific field screening measurements.

Two analytes were targeted with our Drager tube field screening activities: petroleum hydrocarbons and benzene. Both of these analytes have shown decreases in concentration similar to those observed in the PID measurements. Petroleum hydrocarbons have declined from initial concentrations of up to 2,500 ppm to less than 10 ppm, and benzene from as high as 50 ppm to less than 0.5 ppm.

Emissions samples were collected on a quarterly basis from January 1995 through October 1998 for analysis for BTEX and volatile petroleum hydrocarbons. Again, results of analyses have shown decreases in concentrations of these compounds similar to those observed through field screening.

CONCEPTUAL SITE MODEL

A CSM (Figure 3) developed for the site describes the primary contaminant sources, release mechanisms, secondary sources, mechanisms of retention in or transport to exposure media, receptors who may come in contact with the exposed media, and intake routes through which receptors may be exposed.

Primary Sources and Release Mechanisms

It is apparent the primary sources for soil contamination at the site were the UST and/or dispensers. Surface spills or releases not associated with the fuel systems on this property were

not evident and not considered to be a primary source. The primary sources are no longer present on the site.

Waste oil tank? floor drains?

Secondary Sources

Fuel hydrocarbons released to the environment from the primary source (USTs) were adsorbed to site soils, where they served as a secondary source from which chemicals could migrate to groundwater or air. Soil sampling at the site has been limited to those samples collected during the initial site assessment in 1993, the used-oil UST removed in 1994, and subsequent off-site monitoring well installations. Therefore, current soil conditions in the vicinity of the former UST system can only be inferred from the abundance of water quality and VES emissions data collected since 1993. Based on those data, remediation by soil vapor extraction and air injection appear to have reduced the secondary source from subsurface soil to groundwater in the vicinity of the on-site monitoring wells.

Retention and Transport Mechanisms

Hydrocarbons released in the subsurface resulted in contamination of subsurface soils and groundwater. Contaminant retention in or adsorption to soil is controlled both by chemical properties and environmental factors. Petroleum constituents are hydrophobic and tend to sorb to soil, particularly fine-grained soils and organic matter, rendering the released hydrocarbons in these soils less mobile than in sand or gravel. Aqueous phase hydrocarbons may be transported from the UST site by advection, potentially contaminating adjacent subsurface soils. This may result in contamination of groundwater through leaching and infiltration, in addition to the groundwater contamination attributable to past releases of petroleum directly into the groundwater.

Most of the hydrocarbons released to the soil at this site have been removed by the vapor extraction remediation system, which began operation in January 1995.

Hydrocarbons retained in groundwater have been greatly reduced by phase transformation from air injection, indicating the effectiveness of the AI/VES treatment. Groundwater quality in these wells has changed little since 1999, though hydrocarbon concentrations have fluctuated by as much as an order of magnitude. This suggests that the treatment system has reached a point of

diminishing return, wherein continued operation of the AI/VES will likely have a minimal effect on contaminant phase transformation from groundwater to soil vapor. As noted in our January 15, 2003, water quality report, the treatment system effectiveness appears to be limited by a lack of oxidants in the groundwater.

Potential Exposure Media

For potential receptors at the ground surface, neither ingestion nor direct contact represent exposure media of concern. Outdoor exposure to volatile hydrocarbons is also of little concern, as most of the site and downgradient area are paved, and no hydrocarbons are known to be present in exposed surface soils.

Based on the described sources and transport mechanisms, three media present the possibility for potential exposure to hydrocarbon contamination on site: contaminated groundwater, subsurface soil, and volatilized hydrocarbons from subsurface soils. As groundwater and subsurface soil are not accessible from the ground surface, exposure scenarios affecting potential receptors would first require excavation in the area of the former tanks. Exposure to volatile compounds in indoor air is possible, as hydrocarbons were detected in groundwater samples adjacent to the existing building, which has a basement. These potential exposure scenarios are discussed below.

Human Receptors and Potential Intake Routes

The building on the site is currently occupied by an insurance agency; there are no permanent residents at the site. Visitors are typically present at the site for very short periods of time and have an insignificant potential for exposure to the subsurface contaminants. Exposed asphalt surface covers the site. As noted above, exposure to volatile hydrocarbons in outdoor air represents an insignificant pathway.

Water and sewer services are provided to the site and surrounding area by Golden Heart Utilities, and groundwater in this area is not known to be used as a drinking water source. A well was formerly located at the site (inside the building) but has been closed (date unknown). Noyes Slough, 200 feet west of the site, is a potential groundwater receptor, though four samples representing two sampling events have not detected any VOCs or GRO in the slough.

Furthermore, Noyes Slough is frozen solid during the winter months, presumably eliminating the potential groundwater-to-surface water pathway for that part of the year.

For on-site subsurface soil and on-site and off-site groundwater potential exposure media, the assessment of exposure presented here assumes the potential receptors would be utility or construction site workers, not regular employees of the site, who would be exposed only during short-term excavation activities.

For the indoor air potential exposure medium, the assessment of exposure presented here assumes the potential receptors would be employees of the business located at the site. This is a potentially complete exposure pathway, but the degree of its significance is not known. Several businesses have operated at the site over the past decade, including a travel agency, a retail apparel store, and the currently-operating insurance agency.

Based on the CSM, the exposure routes of potential importance appear to be short-term ingestion/direct contact with groundwater or with hydrocarbons in soil by trench workers, and limited duration inhalation of volatile compounds in indoor air.

Alternative Cleanup Levels

Benzene concentrations exceed the 18 AAC 75 Table C groundwater cleanup levels in four of the five on-site monitoring wells during the August 2002 sampling event. Off-site benzene concentrations were also found to exceed ADEC cleanup levels in the 2001 temporary well point sampling event. Furthermore, it appears that the AI/VES has reached a point of diminished return for hydrocarbon reduction.

On-site and off-site benzene concentrations, while greatly reduced from initial concentrations, remain above cleanup levels. An alternative treatment technology, such as nutrient injection, may provide additional reductions in contaminant concentrations; therefore, it may be premature to develop alternative cleanup levels for the 230 Old Steese site. A risk-based approach to site cleanup may be warranted; as described in the CSM, the potential impacts of site contamination on human receptors are low and may justify limited monitoring in support of a no further action (NFA) or no further remedial action planned (NFRAP) status once the UST financial assistance program terminates in 2004.

We understand ADEC is evaluating conditions and corrective action requirements at various sites in the Fairbanks area as part of an ongoing regional groundwater quality study. However, no modifications to regional groundwater cleanup levels have been developed as of yet.

CONCLUSIONS

The objective of this RI report is to provide an interpretation of off-site groundwater and Noyes Slough water quality and continued trends in on-site water quality. The conclusions presented herein summarize our interpretation of the on-site and off-site water quality.

1. Corrective actions at the 230 Old Steese site have achieved reductions in benzene concentrations in on-site groundwater of 99 percent or greater since AI/VES operations began in 1995. In August 2002, benzene exceeded its ADEC groundwater cleanup level in on-site wells MW-2, MW-3, MW-4, and MW-6.

2. Trends in on-site water quality show benzene concentrations fluctuating since early 1999 with no apparent causal relationship to other factors such as AI/VES operation or depth to groundwater. While the treatment system continues to remove VOCs from subsurface soils, this suggests it has reached the practical limits of its effectiveness.

3. VES emissions monitoring data show significant reductions in volatile compounds, petroleum hydrocarbons, and benzene between the system's startup and early 2000. PID field screening since 2000 has shown consistently low but variable concentrations of volatile compounds, supporting the conclusion that the practical effectiveness of the treatment system has been reached.

4. Groundwater geochemical data indicate oxidant concentrations in the area are generally not sufficient to support microbial degradation of the petroleum compounds present. At these locations, oxidants may ultimately limit biodegradation unless supplemented from another source.

5. Benzene concentrations in off-site monitoring wells MW-7 and MW-8 have shown inconsistent fluctuations since their installation in 1994. Newly-installed off-site wells MW-9 and MW-10 both contain benzene at a 2002 maximum of 385 µg/L and 4.91 µg/L, respectively. Well MW-10 is adjacent to Noyes Slough.

6. Other contaminated sites in the vicinity of the 230 Old Steese site may be contributing to groundwater contamination in the area. These include a retail gasoline station, a commercial printing shop, and a utility system pump station.

7. Water quality in Noyes Slough does not appear to have been affected by groundwater contamination downgradient of the 230 Old Steese site.

RECOMMENDATIONS

Based on our evaluation of on-site and off-site water quality at the 230 Old Steese Highway site, the CSM developed herein, and our conclusions presented above, we offer the following recommendations:

- Continue semiannual groundwater and surface water sampling, including chemical analyses for chemical constituents (GRO, BTEX, and/or VOCs) as well as geochemical data.

- Evaluate the utility of addressing on-site groundwater contamination by injecting oxidants to enhance contaminant degradation rates. The existing air injection system could be modified to serve as an oxidant injection mechanism, while the vapor extraction system could continue to operate as designed.

- Evaluate indoor air quality at the building located at 230 Old Steese Highway. The objective of this evaluation would be to provide data to more accurately assess the inhalation of volatile compounds in indoor air as a potential exposure pathway.

LIMITATIONS

This report was prepared for the exclusive use of Davidson Inc., ADEC, and their representatives in the assessment of the groundwater quality at 230 Old Steese Highway in Fairbanks, Alaska. The data we have presented are based on the scope of our services and the sampling and analysis that we performed. They should not be construed as definite conclusions about the groundwater quality at the site; changes due to natural forces or human activity can occur on the site. The data presented herein should be considered representative only of the time of our sampling and not as a definite statement regarding reported conditions.

We trust that this information is sufficient for your needs at the present time. If you have any questions, please do not hesitate to call.

Sincerely,

SHANNON & WILSON, INC.

Christopher Darrah, CPG
Senior Geologist

Reviewed By
David M. McDowell
Vice President, Environmental Services

Enclosures:

Table 1	Historical Results for GRO and BTEX
Table 2	Historical Results for VOCs (excluding BTEX, GRO)
Table 3	Off-Site 2001 Well Point Data
Table 4	Historical Air Monitoring Data
Figure 1	Location of On-Site Monitoring Wells
Figure 2	Location of Monitoring Wells, Temporary Well Points, and Surface Water Samples
Figure 3	Conceptual Site Model
Appendix A	List of Selected Shannon & Wilson, Inc., Reports, US Travel Facility

cc: Janice Wiegers, ADEC - NRO
Todd Blessing, ADEC – FAP

TABLE 1
230 Old Steese Groundwater Quality Summary
Historical Results for GRO and BTEX
(units µg/L)

Monitoring Well	Sampling Date	Benzene	Toluene	Ethylbenzene	Xylenes	GRO
Groundwater Cleanup Level -->		5	1,000	700	10,000	1,300
MW-1	6/28/1993	**26,000**	**29,000**	**3,200**	**14,000**	—
MW-1	3/8/1994	**22,000**	**24,000**	**2,400**	**12,000**	—
MW-1	7/7/1994	**22,000**	**23,000**	**2,000**	**11,000**	—
MW-1	2/22/1995	**21,000**	**25,000**	**2,200**	**12,000**	—
MW-1	5/9/1995	**17,000**	**21,000**	**1,900**	**10,000**	—
MW-1	8/31/1995	**15,000**	**16,000**	**1,100**	6,800	—
MW-1	12/18/1995	**18,000**	**20,000**	**1,100**	9,800	—
MW-1	7/11/1996	**15,000**	**19,000**	**1,100**	100	—
MW-1	12/4/1996	**13,100**	**17,900**	**877**	**12,400**	—
MW-1	7/29/1997	**15,800**	**17,600**	351	**10,400**	—
MW-1	1/9/1998	**17,100**	**23,100**	**1,240**	**11,300**	—
MW-1	6/30/1998	**471**	**2,070**	181	3,620	—
MW-1	1/13/1999	1.34	5.59	1.79	21.20	—
MW-1	7/20/1999	<1.00	<1.00	1.45	3.15	—
MW-1	2/4/2000	2.65	<1.00	4.83	8.61	—
MW-1	2/4/00	2.47	<1.00	4.89	8.81	—
MW-1	12/6/2000	0.650	1.12	0.574	2.64	73.9
MW-1	7/30/2001	Not sampled: access to well limited by road construction				
MW-1	2/22/2002	<1.00	<1.00	1.93	3.26	378
MW-1	8/20/2002	<0.200	<0.500	<0.500	<1.00	<50
MW-2	6/28/1993	**8,800**	**19,000**	**2,800**	**11,000**	—
MW-2	3/8/1994	**8,800**	**15,000**	**2,200**	9,700	—
MW-2	3/8/94	**4,600**	**16,000**	**2,300**	**10,000**	—
MW-2	7/8/1994	**2,800**	**5,000**	**1,500**	5,600	—
MW-2	2/22/1995	**3,100**	**3,800**	**1,200**	4,600	—
MW-2	5/9/1995	**3,100**	**8,300**	**1,300**	9,000	—
MW-2	8/31/1995	**1,200**	290	410	1,600	—
MW-2	12/18/1995	**2,200**	**5,300**	360	4,700	—
MW-2	7/11/1996	**326**	**1,443**	95	2,012	—
MW-2	7/11/96	**319**	**1,339**	167	2,017	—
MW-2	12/4/1996	**42.4**	1.38	10.7	27.8	—
MW-2	12/4/96	**50.0**	1.93	13.3	36.7	—
MW-2	7/29/1997	**1,130**	**2,140**	213	984	—
MW-2	7/29/1997	**1,110**	**2,210**	209	978	—
MW-2	1/9/1998	2.44	3.04	<1.00	3.30	—
MW-2	1/9/1998	2.48	3.03	<1.00	3.08	—
MW-2	6/30/1998	**5.16**	<0.5	0.99	3.80	—
MW-2	6/30/98	**5.07**	<0.5	1.02	3.78	—
MW-2	1/13/1999	No sample recovered		—	—	—
MW-2	7/20/1999	**30.5**	139	55.7	245	—
MW-2	2/7/2000	**194**	498	326.0	1,290	—
MW-2	11/17/2000	**76.0**	510	245	1,160	**5,000**
MW-2	7/30/2001	<0.200	<0.500	<0.500	3.23	<50.0
MW-2	2/22/2002	Not sampled: well blocked at 13 feet bgs.				
MW-2	8/19/2002	**57.1**	37	150	926	686

TABLE 1
230 Old Steese Groundwater Quality Summary
Historical Results for GRO and BTEX
(units µg/L)

Monitoring Well	Sampling Date	Benzene	Toluene	Ethylbenzene	Xylenes	GRO
MW-3	6/28/1993	**19,000**	**27,000**	**3,100**	**13,000**	—
MW-3	3/8/1994	**19,000**	**28,000**	**2,900**	**14,000**	—
MW-3	7/8/1994	**18,000**	**25,000**	**2,400**	**13,000**	—
MW-3	7/8/94	**14,000**	**19,000**	**3,000**	**14,000**	—
MW-3	2/22/1995	**21,000**	**28,000**	**2,500**	**13,000**	—
MW-3	2/22/95	**23,000**	**29,000**	**2,600**	**13,000**	—
MW-3	5/9/1995	**8,500**	**11,000**	540	7,700	—
MW-3	8/31/1995	**9,700**	**8,000**	**1,200**	9,300	—
MW-3	8/31/95	**11,000**	**8,800**	**980**	8,300	—
MW-3	12/18/1995	**690**	**2,800**	220	3,200	—
MW-3	7/11/1996	**16**	890	200	2,100	—
MW-3	12/4/1996	<40.0	211	409	3,020	—
MW-3	7/29/1997	<1.00	8.42	27.6	259	—
MW-3	1/9/1998	**39.9**	13.1	87.6	731	—
MW-3	6/30/1998	**14.6**	27.9	150	1,355	—
MW-3	1/13/1999	**616**	19.2	48	581	—
MW-3	7/20/1999	**1,900**	86.0	175	1,327	—
MW-3	2/4/2000	**3,760**	72.9	70.1	751	—
MW-3	11/17/2000	**1,010**	51.0	43.6	330	**3,880**
MW-3	11/17/2000	**948**	46.8	44.2	320	**3,860**
MW-3	7/30/2001	<1.00	<1.00	<1.00	<2.00	<50.0
MW-3	2/22/2002	**796**	118	56.2	220	**3,340**
MW-3	2/22/2002	**1,050**	443	281	1,404	**9,820**
MW-3	8/20/2002	**194**	33.4	4.99	136	746
MW-4	6/28/1993	**49,000**	**44,000**	**3,400**	**14,000**	—
MW-4	3/8/1994	**35,000**	**34,000**	**4,400**	**21,000**	—
MW-4	7/7/1994	**37,000**	**38,000**	**3,000**	**16,000**	—
MW-4	2/22/1995	**44,000**	**38,000**	**2,900**	**15,000**	—
MW-4	5/9/1995	**31,000**	**29,000**	**2,200**	**12,000**	—
MW-4	8/31/1995	**24,000**	**22,000**	**1,500**	**9,100**	—
MW-4	12/18/1995	**23,000**	**25,000**	**1,900**	**13,000**	—
MW-4	12/18/95	**21,000**	**24,000**	**1,900**	**13,000**	—
MW-4	7/11/1996	**16,000**	**19,000**	**2,300**	**18,000**	—
MW-4	12/4/1996	**4,680**	**8,720**	**795**	9,320	—
MW-4	7/29/1997	**214**	648	225	3,960	—
MW-4	1/9/1998	**33**	249	151	2,050	—
MW-4	6/30/1998	**182**	302	172	1,803	—
MW-4	1/13/1999	No sample recovered		—	—	—
MW-4	7/20/1999	**38.9**	97	123	823	—
MW-4	12/6/2000	**82.7**	20.0	91.3	363.8	**2,790**
MW-4	12/6/2000	**68.4**	17.7	76.8	317.2	**3,200**
MW-4	7/30/2001	**26.1**	10.8	104	360	**4,810**
MW-4	7/30/2001	**14.6**	8.03	74.0	283	**1,850**
MW-4	2/22/2002	4.30	8.34	27.6	135.3	**2,360**
MW-4	2/22/2002	2.77	6.33	14.9	99.27	828
MW-4	8/19/2002	**52.8**	22.8	115	353.12	**3,440**
MW-4	8/19/2002	**112**	49.9	138	436.39	**3,450**

TABLE 1
230 Old Steese Groundwater Quality Summary
Historical Results for GRO and BTEX
(units µg/L)

Monitoring Well	Sampling Date	Benzene	Toluene	Ethylbenzene	Xylenes	GRO
MW-5	6/28/1993	**12,000**	**32,000**	**3,600**	**15,000**	—
MW-5	3/8/1994	**8,600**	**15,000**	**2,200**	9,500	—
MW-5	7/7/1994	**1,800**	**4,500**	**1,400**	5,800	—
MW-5	2/23/1995	**5,100**	**18,000**	**2,400**	**12,000**	—
MW-5	5/9/1995	**740**	**2,100**	320	1,700	—
MW-5	8/31/1995	**1,400**	**1,600**	640	1,900	—
MW-5	12/18/1995	**100**	**2,300**	160	1,500	—
MW-5	7/11/1996	**206**	666	46	592	—
MW-5	12/4/1996	**78.1**	68.9	32.0	36.7	—
MW-5	7/29/1997	**118**	49.2	32.6	111	—
MW-5	1/9/1998	**318**	115	216	594	—
MW-5	6/30/1998	**289**	174	178	580	—
MW-5	1/13/1999	No sample recovered		—	—	—
MW-5	7/20/1999	**219**	171	162	548	—
MW-5	12/7/2000	**13.1**	10.7	10.5	31.7	243
MW-5	7/30/2001	This well was destroyed during adjacent road construction.				
MW-6	7/8/1994	**37,000**	**34,000**	**2,500**	**12,000**	—
MW-6	6/30/1998	**114**	119	31.4	145	—
MW-6	1/13/1999	**123**	133	62.5	209	—
MW-6	1/13/1999	**105**	116	51.8	181	—
MW-6	7/20/1999	**45.3**	40.3	31.9	60.7	—
MW-6	7/20/1999	**55.4**	72.1	32.6	84.8	—
MW-6	12/7/2000	**60.4**	34.2	48.2	70.4	1,060
MW-6	7/30/2001	<0.200	<0.500	<0.500	<1.00	<50.0
MW-6	2/22/2002	**1,700**	207.0	227.0	608.0	**6,820**
MW-6	8/19/2002	**44.2**	20.9	15.9	37.21	255
MW-7	7/8/1994	1.1	2.8	<0.50	2.4	—
MW-7	2/22/1995	1.5	<0.50	<0.50	<1.0	—
MW-7	5/9/1995	**66**	1.1	0.56	<1.0	—
MW-7	8/31/1995	**7.9**	0.52	<0.50	<1.0	—
MW-7	12/18/1995	2.4	<0.5	<0.5	<1.0	—
MW-7	12/1/2000	**35.0**	<1.00	<1.00	<3.00	68.7
MW-7	7/30/2001	**13.3**	<1.00	<1.00	<2.00	<50.0
MW-7	2/22/2002	Not sampled				
MW-7	8/20/2002	4.92	<1.00	<1.00	<3.00	<50
MW-8	7/8/1994	**75**	3.3	24	21	—
MW-8	2/22/1995	**1,400**	<20	170	110	—
MW-8	5/9/1995	**84**	0.58	19	1.5	—
MW-8	5/9/1995	**87**	<0.50	19	1.5	—
MW-8	8/31/1995	**1,200**	8.20	130	48	—
MW-8	12/18/1995	**4,000**	190	350	680	—
MW-8	6/7/2000	**186**	2.46	25.8	31.57	—
MW-8	12/1/2000	**326**	1.30	33.5	22.14	**1,580**
MW-8	7/30/2001	3.51	<1.00	<1.00	<2.00	<50.0
MW-8	2/22/2002	Not sampled				
MW-8	8/20/2002	1.14	<1.00	<1.00	<3.00	<50
MW-9	5/28/2002	**385**	<1.00	30.3	<3.00	**1,520**
MW-9	8/20/2002	**280**	<1.00	19.6	3.43	1,090
MW-10	5/28/2002	4.91	<1.00	<1.00	<3.00	<90
MW-10	5/28/2002	4.97	<1.00	<1.00	<3.00	<90
MW-10	8/19/2002	<1.00	<1.00	<1.00	<3.00	<50

NOTES: — Sample not tested for this analyte.
Bold values exceed groundwater cleanup level

TABLE 2
230 Old Steese Groundwater Quality Summary
Historical Results for VOCs (excluding BTEX, GRO)
(EPA Methods 602/601/624/8260, all units µg/L)

Monitoring Well	Sampling Date	1,2 Dibromo-ethane	1,2 Dichloro-ethane	Methylene chloride	Tetrachloro-ethene	Chloro-ethane	1,1,2-Trichloro-ethane	Isopropyl-benzene	p-Isopropyl-toluene	Naphthalene	n-Propyl-benzene	1,2,4-Trimethyl-benzene	1,3,5-Trimethyl-benzene	cis 1,2-Dichloro ethene	Chloro-methane	Trichloro-fluoromethane	sec-Butyl-benzene	Trichloro-ethene	n-Butyl-benzene
Groundwater Cleanup Level-->		—	**5.0**	**5.0**	**5.0**	—	**5.0**	**3,650.0**	—	**1,460**	—	**70.0**	**1,850.0**	**70**	—	—			
MW-1	6/28/1993		**870**	<200	<40	<40	<40	—	—	—	—	—	—	—	—	—			
	3/8/1994		**900**	<5.0	<1.0	<1.0	<1.0	—	—	—	—	—	—	—	—	—			
	7/7/1994		**1,000**	<4,000	<800	<800	<800	—	—	—	—	—	—	—	—	—			
	2/22/1995		**650**	<250	<50	<50	<50	—	—	—	—	—	—	—	—	—			
	5/9/1995		**520**	<50	<10	<10	<10	—	—	—	—	—	—	—	—	—			
	8/31/1995		**350**	**40**	<1.0	9.3	2.0	—	—	—	—	—	—	—	—	—			
	12/18/1995	270	**590**	<250	<50	<50	<50	—	—	—	—	—	—	—	—	—			
	7/11/1996	—	<500	<500	<50	<50	<50	—	—	—	—	—	—	—	—	—			
	12/4/1996	—	<100	<500	<100	<100	<100	—	—	—	—	—	—	—	—	—			
	7/29/1997	—	<50.0	<250	<50.0	<50.0	<50.0	—	—	—	—	—	—	—	—	—			
	1/9/1998	—	<10.0	<50.0	<10.0	<10.0	<10.0	—	—	—	—	—	—	—	—	—			
	6/30/1998	—	<10.0	<100	<10.0	<10.0	<10.0	—	—	—	—	—	—	—	—	—			
	1/13/1999	—	<1	<5	<1	<1	<1	—	—	—	—	—	—	—	—	—			
	7/30/2001	Not sampled: access to well limited by road construction																	
	2/22/02 np	<1.00	<1.00	<5.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	2.08	10.1	3.94	<1.00	<5.00	<1.00	<1.00	<1.00	
MW-3	6/28/1993		<400	<2,000	<400	<400	<400	—	—	—	—	—	—	—	—	—			
	3/8/1994		**220**	<5.0	<1.0	<1.0	<1.0	—	—	—	—	—	—	—	—	—			
	7/8/1994		<800	<4,000	<4,000	<800	<4,000	—	—	—	—	—	—	—	—	—			
	2/22/1995		**200**	<250	<50	<50	<50	—	—	—	—	—	—	—	—	—			
	2/22/95 dup.		**290**	<250	<50	<50	<50	—	—	—	—	—	—	—	—	—			
	5/9/1995		**200**	<50	<10	<10	<10	—	—	—	—	—	—	—	—	—			
	8/31/1995		**270**	<5.0	2.8	6.2	1.6	—	—	—	—	—	—	—	—	—			
	8/31/95 dup.		**250**	<5.0	3.1	7.6	1.8	—	—	—	—	—	—	—	—	—			
	12/18/1995	56	**96**	<25	<5	<5	<5	—	—	—	—	—	—	—	—	—			
	7/11/1996	—	<5	<50	<5	<5	<5	—	—	—	—	—	—	—	—	—			
	12/4/1996	—	<40.0	<200	<40.0	<40.0	<40.0	—	—	—	—	—	—	—	—	—			
	7/29/1997	—	2.97	<5.00	<1.00	<1.00	<1.00	—	—	—	—	—	—	—	—	—			
	1/9/1998	—	<1.00	<5.00	<1.00	<1.00	<1.00	—	—	—	—	—	—	—	—	—			
	6/30/1998	—	<10	<100	<10	<10	<10	—	—	—	—	—	—	—	—	—			
	1/13/1999	—	<10	<50	<10	<10	<10	—	—	—	—	—	—	—	—	—			
	7/30/01 np	<1.00	<1.00	<5.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<5.00	<1.00			
	2/22/02 np	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	2.76	2.10	7.10	5.21	51	18.5	<1.00	<5.00	<1.00	<1.00	<1.00	
	2/22/2002	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	18.9	12.8	40.1	54.5	**390**	87.8	<1.00	<5.00	<1.00	<1.00	<1.00	

TABLE 2
230 Old Steese Groundwater Quality Summary
Historical Results for VOCs (excluding BTEX, GRO)
(EPA Methods 602/601/624/8260, all units µg/L)

Monitoring Well	Sampling Date	1,2 Dibromo-ethane	1,2 Dichloro-ethane	Methylene chloride	Tetrachloro-ethene	Chloro-ethane	1,1,2-Trichloro-ethane	Isopropyl-benzene	p-Isopropyl-toluene	Naphthalene	n-Propyl-benzene	1,2,4-Trimethyl-benzene	1,3,5-Trimethyl-benzene	cis 1,2-Dichloro ethene	Chloro-methane	Trichloro-fluoromethane	sec-Butyl-benzene	Trichloro-ethene	n-Butyl-benzene
Groundwater Cleanup Level-->		—	**5.0**	**5.0**	**5.0**	—	**5.0**	**3,650.0**	—	**1,460**	—	**70.0**	**1,850.0**	**70**	—	—			
MW-4	6/28/1993		**1,400**	<2,000	<400	<400	<400	—	—	—	—	—	—	—	—	—			
	3/8/1994		**1,200**	<5.0	<1.0	<1.0	<1.0	—	—	—	—	—	—	—	—	—			
	7/7/1994		**1,600**	<4,000	<800	<800	<800	—	—	—	—	—	—	—	—	—			
	2/22/1995		**830**	<250	<50	<50	<50	—	—	—	—	—	—	—	—	—			
	5/9/1995		**590**	<50	<10	<10	<10	—	—	—	—	—	—	—	—	—			
	8/31/1995		**880**	**31**	<1.0	5.6	4.8	—	—	—	—	—	—	—	—	—			
	12/18/1995	640	**580**	<250	<50	<50	<50	—	—	—	—	—	—	—	—	—			
	12/18/9 dup.	690	**610**	<250	<50	<50	<50	—	—	—	—	—	—	—	—	—			
	7/11/1996	—	<50	<500	<50	<50	<50	—	—	—	—	—	—	—	—	—			
	12/4/1996	—	<100	<500	<100	<100	<100	—	—	—	—	—	—	—	—	—			
	7/29/1997	—	<50.0	<250	<50.0	<50.0	<50.0	—	—	—	—	—	—	—	—	—			
	1/9/1998	—	<10.0	<50.0	<10.0	<10.0	<10.0	—	—	—	—	—	—	—	—	—			
	6/30/1998	—	**25**	**123**	<10.0	<10.0	<10.0	—	—	—	—	—	—	—	—	—			
	7/20/1999	<1.00	3.80	<5.00	<1.00	<1.00	<1.00	9.04	8.81	55.7	18.1	**400**	98.4	—	—	—			
	12/6/2000	2.85	<1.00	<5.00	<1.00	<1.00	<1.00	8.53	<1.00	41.3	17.0	**193**	78.5	<1.00	<5.00	<1.00			
	12/06/00 dup	3	<1.00	<5.00	<1.00	<1.00	<1.00	7.45	<1.00	36.1	15.2	**221**	72.3	<1.00	<5.00	<1.00			
	7/30/01 np	<1.00	<1.00	<5.00	<1.00	<1.00	<1.00	12.9	10.1	65.4	30.4	**355**	141	<1.00	<5.00	<1.00	2.38		
	7/30/01 dup. np	<1.00	<1.00	<5.00	<1.00	<1.00	<1.00	8.23	7.34	48.2	20.4	**263**	106	<1.00	<5.00	<1.00	1.84		
	2/22/02 np	<1.00	<1.00	<5.00	<1.00	<1.00	<1.00	5.33	4.65	25.4	11.3	**145**	53.2	<1.00	<5.00	<1.00	<1.00	<1.00	
	2/22/02 dup. np	<1.00	<1.00	<5.00	<1.00	<1.00	<1.00	3.22	3.04	13.8	6.84	**98.4**	34.6	<1.00	<5.00	<1.00	<1.00	<1.00	
	8/19/2002	<1.00	<1.00	<5.00	<1.00	<1.00	<1.00	3.79	4.24	45.3	10.6	**294**	97.2	<1.00	<5.00	<1.00	<1.00	<1.00	1.25
	8/19/02 dup.	<1.00	<1.00	<5.00	<1.00	<1.00	<1.00	3.34	6.70	92.6	10.2	**295**	108	<1.00	<5.00	<1.00	<1.00	<1.00	<1.00
MW-6	7/8/1994		**2,100**	<4,000	<800	<800	<800	—	—	—	—	—	—	—	—	—			
	8/19/2002	<1.00	<1.00	<5.00	<1.00	<1.00	<1.00	<1.00	<1.00	3.28	1.31	10.5	3.27	<1.00	<5.00	<1.00	<1.00	<1.00	<1.00
MW-7	12/1/2000	<1.00	<1.00	<5.00	1.68	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	1.15	<5.00	<1.00			
	7/30/2001	<1.00	<1.00	<5.00	1.34	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	1.21	<5.00	2.09	<1.00	1.13	
	8/20/2002	<1.00	<1.00	<5.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<5.00	<1.00	<1.00	<1.00	<1.00
MW-8	7/8/1994	ND	2.9	ND	1.8	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	3.5	<1.0			
	2/22/1995	ND	**32**	ND	<5.0	ND	ND	ND	ND	ND	ND	ND	ND	<5.0	<5.0	<5			
	5/9/1995	ND	2.4	ND	1.2	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1.0			
	5/9/95 dup.	ND	2.3	ND	1.2	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<1.0	<1.0			
	8/31/1995	ND	**38**	ND	**5.5**	ND	ND	ND	ND	ND	ND	ND	ND	<1.0	<5.0	<1.0			
	12/18/1995	ND	<1.0	ND	4.3	ND	ND	ND	ND	ND	ND	ND	ND	1.15	<5.0	7.4			
	12/1/2000	<1.00	<1.00	<5.00	1.31	<1.00	<1.00	9.98	1.48	11.6	9.85	41.3	11.3	<1.00	<5.00	<1.00			
	7/30/2001	<1.00	<1.00	<5.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<5.00	<1.00	<1.00	<1.00	
	8/20/2002	<1.00	<1.00	<5.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<5.00	<1.00	<1.00	<1.00	<1.00

TABLE 2
230 Old Steese Groundwater Quality Summary
Historical Results for VOCs (excluding BTEX, GRO)
(EPA Methods 602/601/624/8260, all units µg/L)

Monitoring Well	Sampling Date	1,2 Dibromo-ethane	1,2 Dichloro-ethane	Methylene chloride	Tetrachloro-ethene	Chloro-ethane	1,1,2-Trichloro-ethane	Isopropyl-benzene	p-Isopropyl-toluene	Naphthalene	n-Propyl-benzene	1,2,4-Trimethyl-benzene	1,3,5-Trimethyl-benzene	cis 1,2-Dichloro ethene	Chloro-methane	Trichloro-fluoromethane	sec-Butyl-benzene	Trichloro-ethene	n-Butyl-benzene
Groundwater Cleanup Level-->		—	**5.0**	**5.0**	**5.0**	—	**5.0**	**3,650.0**	—	**1,460**	—	**70.0**	**1,850.0**	**70**	—	—			
MW-9	5/28/2002	<1.00	<1.00	<5.00	<1.00	<1.00	<1.00	7.22	<1.00	<2.00	8.05	<1.00	<1.00	4.21	<1.00	<1.00	1.2	2.55	<1.00
	8/20/2002	<1.00	<1.00	<5.00	2.95	<1.00	<1.00	6.29	<1.00	<1.00	6.43	21	<1.00	1.68	<5.00	<1.00	<1.00	1.53	<1.00
MW-10	5/28/2002	<1.00	<1.00	<5.00	1.37	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
	5/28/02 dup.	<1.00	<1.00	<5.00	1.19	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
	8/19/2002	<1.00	<1.00	<5.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<5.00	<1.00	<1.00	<1.00	<1.00

NOTES:

This table presents a summary of water quality data collected from wells located at the 230 Old Steese project site.

Not all monitoring wells have been tested for VOCs at each sampling event.

The methods used to analyze for VOCs have varied between sampling events. Data gaps present in this table represent the absence of data resulting from wells not having been tested for VOCs, or the variation in the number of analytes reported for a given analytical method.

Bold values exceed the groundwater cleanup level

"<1.00" Analyte not detected at a concentration greater than the value indicated

"—" Sample not tested for this analyte.

"ND" Analyte not detected above the PQL

BTEX and GRO results are shown in Table 2.

This table presents historic data for these wells, for reference only. We did not research old reports to determine detection limits for historic data.

"np" = Sample was collected using a no-purge technique.

TABLE 3
230 Old Steese Groundwater Quality Summary
Off-Site 2001 Well Point Data
(units in µg/L)

Analyte	ADEC Groundwater Cleanup Level[1]	Well Point Identification								
		WP-1	WP-2	WP-3	WP-4	WP-5	WP-6	WP-7	WP-8	WP-8 Dup.[2]
Benzene	5	2.8	**330 D**	**170 D**	**480 D**	**60**	**16**	**520 D**	**300 D**	**420 D**
Toluene	1,000	ND(1.0)	ND(5.0) D	1.9	91	2.1	2.0	31 D	2.1	2.2
Ethylbenzene	700	ND(1.0)	77 D	12	360 D	ND(1.0)	ND(1.0)	680 D	45	49
p, m- Xylenes	10,000*	ND(2.0)	ND(10) D	ND(2.0)	1100 D	ND(2.0)	ND(2.0)	960 D	2.4	2.6
o-Xylenes	(*total xylenes)	ND(1.0)	ND(5.0) D	ND(1.0)	150 D	ND(1.0)	ND(1.0)	ND(20) D	ND(1.0)	ND(1.0)
1,2-Dibromoethane		ND(1.0)	ND(5.0) D	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(20) D	ND(1.0)	ND(1.0)
2-Methylnaphthalene	1,500	ND(5.0)	ND(25) D	ND(5.0)	8.2	ND(5.0)	ND(5.0)	ND(100) D	ND(5.0)	ND(5.0)
4-Isopropyltoluene		ND(1.0)	ND(5.0) D	ND(1.0)	5.6	ND(1.0)	ND(1.0)	ND(20) D	ND(1.0)	ND(1.0)
Acetone	3,650	ND(25)	ND(130) D	ND(25)	34	ND(25)	ND(25)	ND(500) D	ND(25)	ND(25)
Chloromethane		ND(1.0)	ND(5.0) D	ND(1.0)	22	2.8	3.3	ND(20) D	ND(1.0)	ND(1.0)
cis-1,2-Dichloroethene		3.6	ND(5.0) D	1.2	2.0	ND(1.0)	ND(1.0)	ND(20) D	1.4	1.4
Isopropylbenzene	3,650	ND(5.0)	ND(25) D	ND(5.0)	31	ND(5.0)	ND(5.0)	ND(100) D	ND(5.0)	5.3
Naphthalene	1,460	ND(5.0)	ND(25) D	ND(5.0)	60	ND(5.0)	ND(5.0)	ND(100) D	ND(5.0)	5.1
n-Butylbenzene		ND(1.0)	11 D	ND(1.0)	9.8	ND(1.0)	ND(1.0)	ND(20) D	ND(1.0)	ND(1.0)
n-Propylbenzene		ND(1.0)	23 D	5.1	72	ND(1.0)	ND(1.0)	62 D	8.6	9.6
Tetrachloroethene	5	1.9	ND(5.0) D	2.3	3.5	4.2	**11**	ND(20) D	1.6	1.5
Trichloroethene	5	ND(1.0)	ND(5.0) D	1.3	ND(1.0)	ND(1.0)	ND(1.0)	ND(20) D	ND(1.0)	1.1
Trichlorofluoromethane		ND(1.0)	ND(5.0) D	2.1	ND(1.0)	4.0	4.6	ND(20) D	70	59
1,2,4-Trimethylbenzene	1,850	ND(1.0)	ND(5.0) D	ND(1.0)	330 D	ND(1.0)	ND(1.0)	720 D	1.8	1.9
1,3,5-Trimethylbenzene	1,850	ND(1.0)	ND(5.0) D	ND(1.0)	200 D	ND(1.0)	ND(1.0)	230 D	1.3	1.5
Vinyl Chloride	2	ND(1.0)	ND(5.0) D	ND(1.0)	1.2	ND(1.0)	ND(1.0)	ND(20) D	ND(1.0)	ND(1.0)

NOTES:

[1] Blank spaces indicate no groundwater cleanup level has been promulgated by ADEC for the listed analyte.

[2] The field duplicate sample collected at well point WP-8 is designated WP-9 in the laboratory data report

Bold Type indicates a concentration exceeding ADEC groundwater cleanup levels (18 AAC 75, as amended by Technical Memorandum 01-007).

D = Sample result is based on secondary dilution.

ND(5) Indicates the analyte was not detected. The practical quantitation limit is shown in parentheses.

No VOCs were detected in the trip blank associated with these samples.

TABLE 4
230 Old Steese Groundwater Quality Summary
Historical Air Monitoring Data

	FIELD SCREENING RESULTS			ANALYTICAL RESULTS				
Date	PID Hydrocarbons ppm	Petroleum Hydrocarbons Drager Tube ppm	Benzene Drager Tube ppm	Benzene EPA 8240 ppmv	Ethylbenzene EPA 8240 ppmv	Toluene EPA 8240 ppmv	Xylenes EPA 8240 ppmv	Volatile Petroleum Hydrocarbons EPA 8015M ppm
19-Jan-91	na	na	na	195	1	19	2	—
26-Jan-91	198	300	3	—	—	—	—	—
30-Jan-91	921	1700	40	6.1	5.92	27.7	14.9	—
15-Feb-91	1657	2500	40	—	—	—	—	—
20-Feb-91	1018	2300	13	—	—	—	—	—
22-Feb-91	686	1100	20	—	—	—	—	—
26-Feb-91	699	800	13	—	—	—	—	—
2-Mar-91	686	1000	10	—	—	—	—	—
9-Mar-91	680	680	16	—	—	—	—	—
20-Mar-91	798	1500	18	—	—	—	—	—
23-Mar-91	726	2500	18	—	—	—	—	—
23-Mar-91	953	2500	50	—	—	—	—	—
6-Apr-91	1113	2500	40	—	—	—	—	—
17-Apr-91	na	800	43	—	—	—	—	—
19-Apr-91	548	500	12	20	4	42	19	809
25-Apr-91	na	300	12	—	—	—	—	—
3-May-91	na	100	1	—	—	—	—	—
16-May-91	na	300	10	—	—	—	—	—
25-May-91	na	300	10	—	—	—	—	—
4-Jun-91	na	300	12	—	—	—	—	—
15-Jun-91	na	100	4	14	7	42	39	992
16-Nov-91	na	500	12	—	—	—	—	—
14-Dec-91	50	50	1	2.4	0.6	5.2	4.5	117
8-Apr-92	845	500	20	1.91	<0.58	1.85	0.80	—
30-Apr-92	255	100	20	—	—	—	—	—
30-May-92	351	250	10	—	—	—	—	—
26-Jun-92	227	250	10	3.1	<0.58	6.2	3.54	162
1-Aug-92	490	400	20	—	—	—	—	—
19-Sep-92	420	300	20	—	—	—	—	—
20-Oct-92	330	150	10	3.1	<0.58	6.0	3.69	364

TABLE 4
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Historical Air Monitoring Data

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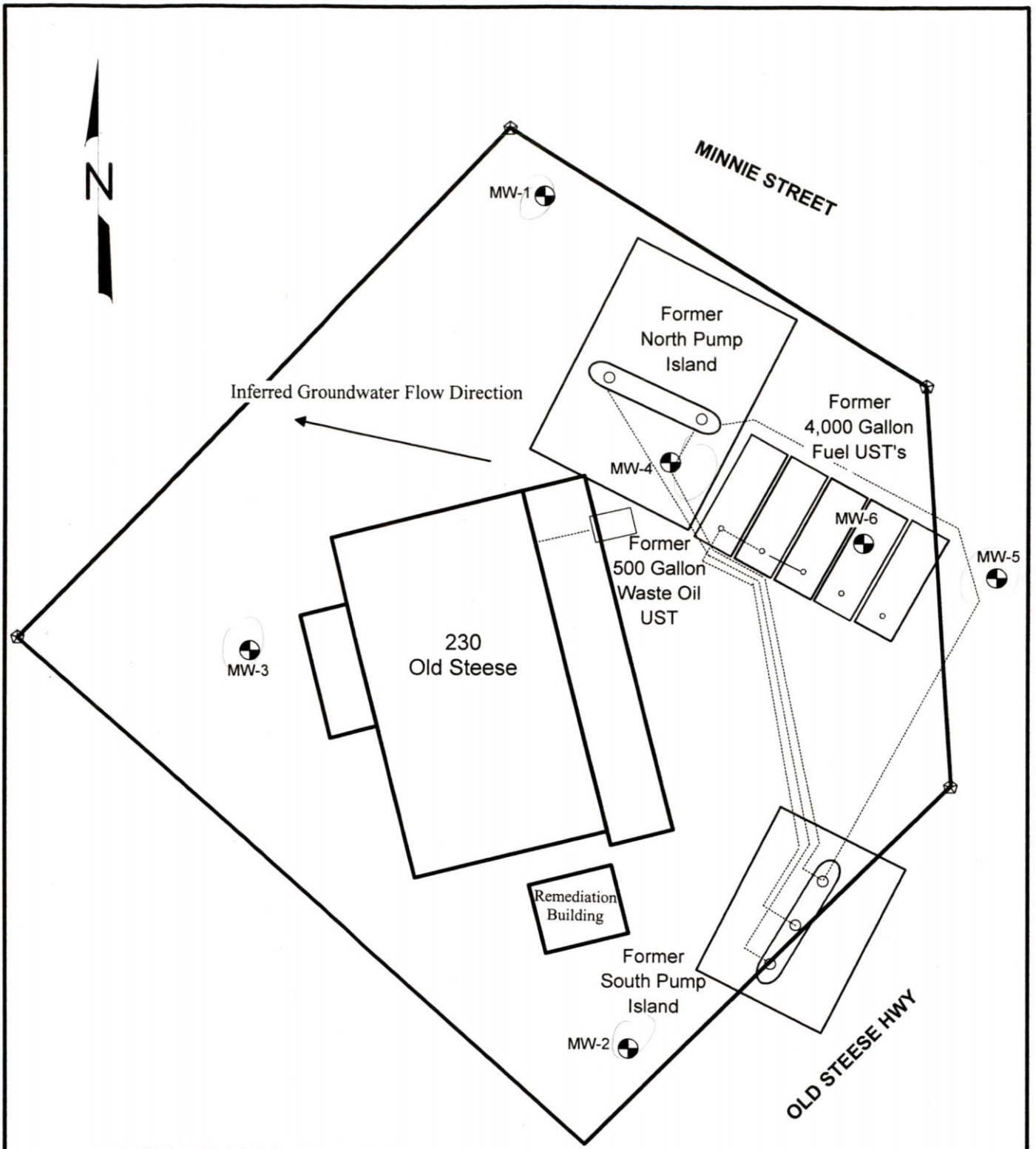
Date	PID Hydrocarbons ppm	Petroleum Hydrocarbons Drager Tube ppm	Benzene Drager Tube ppm	Benzene EPA 8240 ppmv	Ethylbenzene EPA 8240 ppmv	Toluene EPA 8240 ppmv	Xylenes EPA 8240 ppmv	Volatile Petroleum Hydrocarbons EPA 8015M ppm
20-Nov-92	237	100	6	—	—	—	—	—
26-Dec-92	250	100	10	—	—	—	—	—
29-Jan-93	387	200	10	<0.78	<0.58	1.7	2.46	566
4-Mar-93	236	200	10	—	—	—	—	—
30-Mar-93	270	300	10	—	—	—	—	—
28-Apr-93	88	50	3	3.5	0.73	9.0	7.0	20
5-Jun-93	189	100	3	—	—	—	—	—
29-Jun-93	80	50	3	—	—	—	—	—
27-Jul-93	60	50	1	0.72	0.49	3.09	5.34	17.8
28-Aug-93	70	50	1	—	—	—	—	—
25-Sep-93	100	100	3	—	—	—	—	—
30-Oct-93	70	50	1	2.89	2.23	10.3	19.21	323
24-Nov-93	100	50	1	—	—	—	—	—
30-Dec-93	90	100	3	—	—	—	—	—
27-Jan-94	160	100	10	1.21	0.91	5.81	11.91	189
4-Mar-94	140	100	3	—	—	—	—	—
30-Mar-94	80	50	3	—	—	—	—	—
29-Apr-94	50	25	<0.5	<0.78	<0.58	0.82	0.70	320
31-May-94	80	50	5	—	—	—	—	—
25-Jun-94	10	10	0.5	—	—	—	—	—
29-Jul-94	5	10	<0.5	<0.78	<.058	1.51	4.67	50.2
27-Aug-94	na	10	<0.5	—	—	—	—	—
5-Oct-94	11	10	<0.5	—	—	—	—	—
25-Oct-94	28	25	<0.5	<0.78	<0.58	<0.66	0.74	40.9
29-Nov-94	11	10	0.5	—	—	—	—	—
21-Dec-94	28	25	<0.5	—	—	—	—	—
14-Jan-95	40	25	<0.5					
31-May-95	18	5	<0.5					
30-Jun-95	15	5	<0.5					
18-Jul-95	18	10	<0.5					

TABLE 4
230 Old Steese Groundwater Quality Summary
Historical Air Monitoring Data

	FIELD SCREENING RESULTS			ANALYTICAL RESULTS				
Date	PID Hydrocarbons ppm	Petroleum Hydrocarbons Drager Tube ppm	Benzene Drager Tube ppm	Benzene EPA 8240 ppmv	Ethylbenzene EPA 8240 ppmv	Toluene EPA 8240 ppmv	Xylenes EPA 8240 ppmv	Volatile Petroleum Hydrocarbons EPA 8015M ppm
14-Dec-95	11	10	na					
2-Feb-96	0	10	na					
4-Apr-96	3.9	na	na					
11-May-96	<1	na	na					
18-Jul-96	1	<1	<0.5					
30-Jan-97	1	<5	<0.5					
24-Apr-97	2	na	na					
24-May-97	2	na	na					
19-Jun-97	1	na	na					
15-Jul-97	18.7	na	na					
5-Sep-97	0	na	na					
7-Oct-97	1.7	na	na					
30-Dec-97	<1	<10	<0.5					
6-Mar-98	18.5	na	na					
20-May-98	4.5	na	na					
4-Nov-98	<1	na	na					
16-Jan-99	<1	na	na					



APPROXIMATE SCALE: 1 inch = 20 feet

0 10 20 40 60

Feet

Monitoring Well

Note: The former pump island and UST locations are approximate.

230 Old Steese
Fairbanks, Alaska

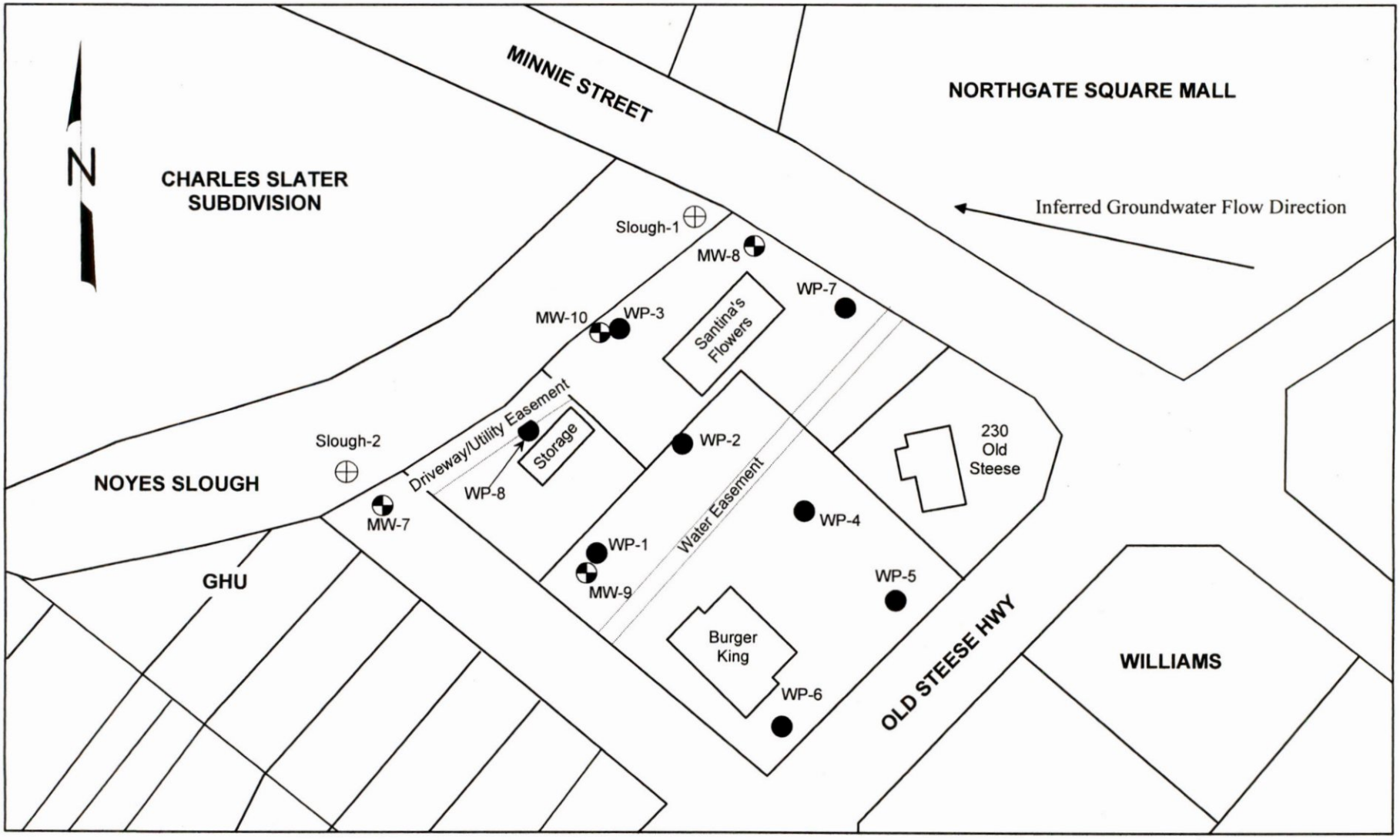
ON-SITE MONITORING WELL LOCATIONS AND FORMER TANK LAYOUT

January 2003

31-1-11076-064

SHANNON & WILSON, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

Figure 1



Approximate Scale: 1 inch = 90 feet

- Well point location
- Off-site monitoring wells
- Slough sampling location

Source: Interior Mapping & Data Services
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230 Old Steese
Fairbanks, Alaska

OFF-SITE MONITORING WELL AND WELL POINT LOCATIONS

January 2003 31-1-11076-064

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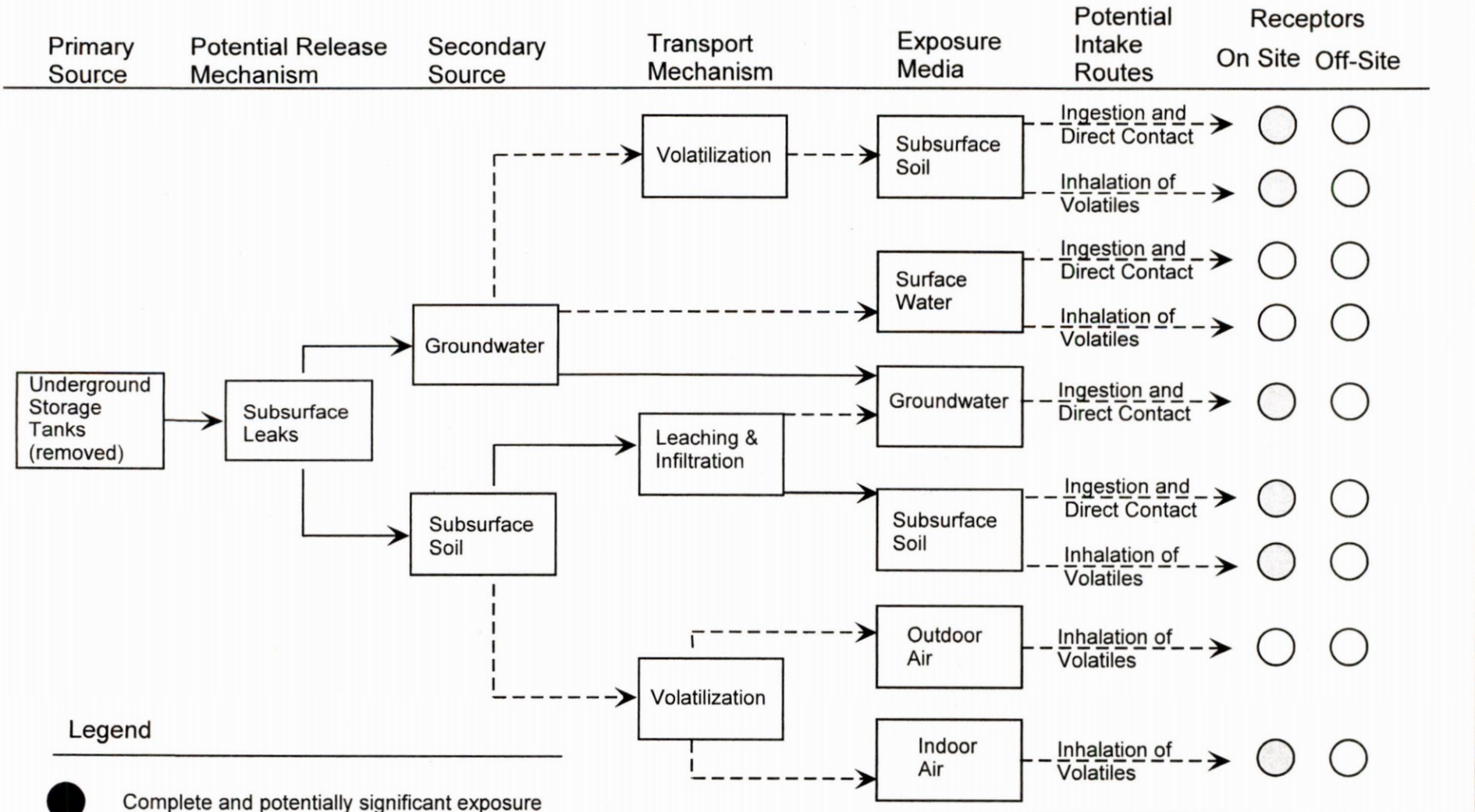
Figure 2



US Travel
230 Old Steese Highway
Fairbanks, Alaska

CONCEPTUAL SITE MODEL

January 2003 31-1-11076-064

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Figure 3

APPENDIX A

List of Selected Shannon & Wilson, Inc. Reports, US Travel Facility

Results of Initial Site Assessment and Release Investigation, US Travel Site, 230 Old Steese Highway, Fairbanks, Alaska. May 4, 1993

Underground Storage Tank Closure, US Travel Site, 230 Old Steese Highway, Fairbanks, Alaska, Site No. 2742. August 19, 1994

Corrective Action Plan, 230 Old Steese Highway, Fairbanks, Alaska. September 15, 1994

Summary and Status Reports
- June 13, 1995
- October 1996
- July 25, 1997
- May 11, 1998

Groundwater Monitoring Reports
- August 2, 1993
- April 12, 1994
- August 15, 1994
- March 29, 1995
- May 24, 1995
- October 11, 1995
- January 17, 1996
- August 19, 1996
- January 7, 1997
- February 13, 1998
- October 6, 1998
- February 4, 1999
- October 21, 1999
- April 3, 2000
- January 30, 2001
- January 18, 2002 (includes results of July 2001 temporary well point sampling)
- April 4, 2002
- January 14, 2003