SITE CHARACTERIZATION AND CORRECTIVE ACTION REPORT

NAPA FACILITY
1937 VAN HORN ROAD
FAIRBANKS, ALASKA

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Prepared for:

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ACRONYMS AND ABBREVIATIONS

AAC	Alaska Administrative Code
ADEC	Alaska Department of Environmental Conservation
ADOT&PF	Alaska Department of Transportation and Public Facilities
BGS	Below ground surface
CA	Corrective Action
COC	Contaminant of Concern
CSM	Conceptual Site Model
CU	College Utility
CY	Cubic Yard
DP	Duplicate Pair
DRO	Diesel Range Organics
EPA	Environmental Protection Agency
FNSB	Fairbanks North Star Borough
GHU	Golden Heart Utility
GNI	Great Northwest, Inc.
GPC	General Parts Company
GRO	Gasoline Range Organics
LOQ	Limit of Quantitation
MEK	2-butanone
MIBK	4-methyl-2-pentanone
MSDS	Material Safety Data Sheet
MW	Monitoring Well
NAPA	National Automotive Parts Association
OIT	Organic Incineration Technology, Inc.
POL	Petroleum, oil, and lubricant
PID	Photo-ionization detector
PCE	Tetrachloroethene
PPM	Parts per million
RAP	Recycled asphalt pavement
RCRA	Resource Conservation and Recovery Act
ROW	Right-of-way
RRO	Residual Range Organics
SAP	Sample & Analysis Plan
SPAR	Spill Prevention and Response
SVOC	Semi-Volatile Organic Compound
TAL	Target Analyte List
TCLP	Toxicity Characteristic Leaching Procedure
TSDF	Treatment, Storage, and Disposal Facility
TSP	Temporary Sampling Point
VOC	Volatile Organic Compound
WMR	Waste Management Report
WWTP	Wastewater Treatment Plant

1.0 EXECUTIVE SUMMARY

NORTECH has completed soil and groundwater characterization efforts at the NAPA facility located at 1937 Van Horn Road, in Fairbanks, Alaska. A release of petroleum and other products occurred during a fire and associated firefighting activities on May 26, 2011. Spill response at the Site began the following day with delineation and collection of floating product, contaminated water, and oily soil on the property and adjacent properties. Exterior spill response activities during May and June 2011 consisted of collecting floating product and contaminated water from perimeter ditches, spreading absorbent material, and excavation of visibly contaminated soil. Exterior cleanup and remediation efforts resulted in the collection of approximately 1,500 cubic yards of contaminated soil and 28,000 gallons of oily water. Cleanup inside the building during June, July, and August resulted in the containment, collection, and removal of all products and inventory within the building. The damaged steel structure was removed in October 2011 and the slab was left in place for re-use. Each waste stream identified was characterized and disposed of at an appropriate facility.

NORTECH provided professional oversight of spill cleanup, waste management, and excavation activities during the initial response activities. During this time, ***NORTECH*** worked with NAPA and ADEC to develop the site cleanup and characterization plan that was approved in September 2011 and implemented in September and October 2011. Over 1,100 field screening samples were collected to segregate contaminated soil during excavation and characterize remaining soil at excavation limits. Over 230 laboratory samples were collected to characterize wastes and conditions at the Site. In addition to this work near the ground surface, subsurface investigation included 21 soil borings, 10 temporary groundwater sampling points, and two monitoring wells.

The site characterization and cleanup activities were completed in October 2011. Excavated areas within the developed portions of the lot were backfilled to match the existing grade. A vapor barrier and perforated piping system was installed along the south foundation perimeter where contaminated soil remains within the structural prism of the foundation. A new structure was constructed on the original concrete foundation in 2012 and new recycled asphalt paving (RAP) was installed in the areas that previously had RAP surfacing. The three piles of contaminated soil that were generated during October 2011 were removed for thermal remediation in 2012. A pile of RAP at the southern end of the site is the only item that remains from the cleanup activities and will be removed in 2013.

Due to the complexity of the site and the quantity of data that has been collected, this report divides the soil characterization effort into five components based on location. The groundwater characterization addresses the site and includes wells on adjacent properties. These elements are then brought together to discuss the risk of remaining contaminants to human health and the environment.

Perimeter Ditches

At the time of the release oily water collected in ditches around the perimeter of the site. These areas became known as the Perimeter Ditches and individual ditches were described by the location relative to the building. The characterization data shows that the Northwest, North, Northeast, East Northern, East Southern, Southeast, South, Southwest, and West Southern perimeter ditches meet ADEC cleanup levels. No further characterization or remedial action is considered necessary in these perimeter ditches and a cleanup complete determination for these areas is requested to provide documentation of the status of these areas to adjacent property owners

Former Waste Storage Areas

One of the initial challenges at the site was identifying waste storage areas that were not impacted significantly or in the way of planned cleanup operations. Most wastes containerized during cleanup were stored on the east and south sides of the building until removal from the site. During characterization, approximately 23,500 square feet of the surface were assessed as former waste storage areas. Most former waste storage areas meet the ADEC Method 2 cleanup levels for all contaminants of concern. No further assessment or remediation is recommended in these areas, and documentation that these areas are no longer a concern should be provided in the file.

Within the waste storage areas, three isolated sample locations remain slightly above the ADEC cleanup level for DRO. These are the Southern Pit 8, Pit 7, and the 5Y-SC109 location. Laboratory chromatographs indicate the elevated DRO concentrations are the lighter fraction of petroleum products that have most of their components in the RRO range, such as lightweight motor oil. Nearby results indicate these areas are limited to a total of no more than 3 CY. Additional risk assessment is recommended to determine if alternative cleanup levels are appropriate for these locations and existing documentation is adequate for closure of these concerns.

The southern stockpile area could not be fully characterized in 2011 due to the presence of remaining contaminated soil stockpiles and a stockpile of recycled asphalt pavement (RAP). These stockpiles were generated during the October 2011 cleanup activities and covered approximately 3,000 square feet. The contaminated stockpiles were removed in October 2012 but could not be characterized due to winter conditions. The RAP stockpile will be removed in 2013. This limited area should be characterized following the approved work plan when conditions permit in 2013.

Driveway Areas

Driveway RAP surfaces remained impermeable and no contamination was observed beneath. The original RAP has been collected for reprocessing into new RAP and new RAP surface has been installed in these areas. The gravel driveway surfaces have been characterized and assessed as described in the work plan. Locations with surface staining or other evidence of contamination have been removed, and laboratory results in these areas meet the ADEC Method 2 cleanup levels. Documentation that these areas are no longer a concern should be provided in the file.

Building Perimeter

The Building Perimeter refers to the building footprint and the ground surface within approximately 10 feet of the foundation. Much of the native soil in this area was excavated and replaced with the structural gravel pad for the building. This area also had the highest potential for contamination due to the proximity to the source of the release. Additionally excavation of contaminated soil was limited in this area due to structural concerns related to the foundation.

The top of the concrete slab was cleaned prior to building demolition to remove the remaining oily residue. The slab was observed to be intact with no cracks and minimal other damage from the fire or heavy equipment operations. Floor drains were cleaned and appeared intact. These were winterized to prevent additional damage. Dye testing is recommended to verify integrity after new construction.

The northern half of the Building Perimeter meets ADEC Method 2 cleanup levels. No further assessment or remediation is recommended in these areas. Documentation that these areas are no longer a concern should be provided in the file.

A shallow lens of contaminated soil remains within the structural prism below the concrete foundation at the southern end of the building. This lens extends south from the overhead door on the east side of the building, across the south side of the building, and approximately 30 feet north on the west side of the building. The lens extends approximately five feet radially from the base of the grade beam near the southeast corner and tapers down to the west, extending approximately three feet radially from the grade beam near the southwest corner of the building. DRO concentrations are typically between 597 mg/kg and 7,190 mg/kg, and PCE concentrations on the east side are around 105 to 216 mg/kg and decrease to 0.482 to 0.77 mg/kg on the west side. Benzene and ethylbenzene also exceed the ADEC cleanup level near the southeast corner of the building. In addition to DRO and PCE, RRO also exceeds the ADEC cleanup level near the southwest corner of the building.

Perforated piping and a vapor barrier were installed around the foundation in this area prior to backfilling. These items, along with the concrete slab and impervious RAP surfacing, prevent infiltration, direct contact with the soil, and reduce the potential for vapor migration to both the indoor and outdoor air. The perforated piping can be used to evaluate the potential for vapor intrusion and provide access for vapor mitigation or remediation if necessary. The existing data is expected to be adequate to develop a vapor intrusion assessment plan and complete a risk evaluation to identify the appropriate remediation and long-term management strategy.

Ethylene glycol was observed above the ADEC Method 2 soil cleanup level at approximately 10 feet below the slab in two borings near the southwest corner of the building. The elevated concentrations were in the groundwater smear zone and separated from the shallow contamination by at least five feet of clean soil. This smear zone contamination is addressed as part of the overall groundwater program.

West Ditch

Firefighting water that drained from the west side of the building accumulated in the West Ditch, between the NAPA Building and the adjacent building to the west. Following corrective action, the laboratory results indicated that the West Ditch is separated from the Building Perimeter by clean soil that runs along the buried water line located approximately 4-8 feet west of the building. Most of the West Ditch meets the ADEC Method 2 cleanup levels, although DRO, RRO, and/or PCE remain above the ADEC Method 2 cleanup level at a four well-defined locations.

The total estimated volume of contaminated soil remaining at these four locations is less than 15 cubic yards of soil. An evaluation of the risk of the soil at these four locations is recommended to determine the appropriate course of action for each. If additional corrective action is necessary to address the risk concerns, excavation can be completed in the West Ditch and will require close coordination with the owner of the adjacent property to the west due to the presence of a buried heating oil tank and other potential concerns.

Groundwater

Groundwater beneath the site was observed in a perched layer 4 – 7 feet below the surface and the regional aquifer starting about 10 feet below the surface. The layers appeared to be flat and differences in depth were related to the local surface elevation. The perched layer was not observed in soil borings adjacent to the building where the native material had been removed for the structural gravel pad. The regional aquifer is known to flow generally northwest in this area.

Results from the two monitoring wells on the west side of the building indicate that dissolved contaminants reached the regional aquifer on the west side of the structural gravel pad. DRO, benzene, and glycol concentrations have exceeded the ADEC cleanup level during at least one sampling event in 2011. Soil boring data indicates that smear zone glycol contamination was present near the southwest corner of the building, while petroleum contaminants met the clean levels in the smear zone.

Dissolved contaminants were not detected in either the perched layer or the regional aquifer in the Perimeter Ditches. This includes up-gradient locations as well as down-gradient sampling points, suggesting that the dissolved contamination is most likely limited. No further characterization or remedial action is considered necessary in these locations. A cleanup complete determination for these perimeter ditch areas is requested to provide documentation of the status of these areas to adjacent property owners

Based on these results and observations, a two-year groundwater monitoring program to evaluate contaminants trends in the regional groundwater aquifer at high and low water events is recommended. This should start with sampling the two existing monitoring wells during low water conditions in late March 2013 (prior to breakup) and in June 2013 (after breakup). The details of this sampling program should be identified in a work plan that is reviewed and approved by ADEC. The need for additional temporary sampling points or monitoring wells to delineate dissolved contaminants should be evaluated after these first two events.

Two potential drinking water wells have been identified down-gradient of the site. One is located south of the adjacent building and attempts to sample this well indicate that the well is obstructed. This well is not currently connected to the building and the facility uses the Golden Heart Utilities public water system for water. The second nearby potential drinking water well is located two lots west of the site. The well is currently connected to the structure but is not currently used because the public water system is utilized. Laboratory results indicate contamination is not present in this well. Based on these results and observations, the adjacent property owner should be encouraged to properly decommission the closer, unusable well. No additional testing is necessary for the second well unless the monitoring program determines that contaminants may be migrating towards that well.

Current Risk Evaluation

The Conceptual Site Model (CSM) indicates that three of the five potentially complete exposure pathways are controlled by engineering controls or site conditions. Physical barriers reduce potential contact with the soil for incidental ingestion or dermal absorption. Groundwater is not used for drinking water in the surrounding area, including the site or the adjacent down-gradient property. The remaining two pathways, migration of vapors to outdoor and indoor air, are reduced by physical barriers and can be evaluated through the existing piping system. This piping system can also be utilized for vapor mitigation if necessary.

Long-term management of the remaining contaminated soil and groundwater at the site should be managed through a site-specific risk-based evaluation. Existing site-specific and regional aquifer data is adequate to develop site-specific alternative cleanup levels for soil at the site. The existing monitoring wells and perforated piping system should be adequate to collect additional samples for the evaluation of other exposure pathways under work plans approved by ADEC. The results of these evaluations should be used to determine the most appropriate remediation strategy to be protective of human health and the environment.

This report should be provided to ADEC to document the remediation efforts that have been undertaken, the locations and concentrations of remaining contamination, the conceptual recommendations for evaluating and managing exposure pathways and recommended strategies for permanent encapsulation of the remaining contamination. Future coordination with ADEC is expected to include report review and regulatory comments, review and approval of work plans for assessment and/or remediation activities, and approval of long-term management and monitoring strategies.

2.0 SITE DESCRIPTION & INITIAL CHARACTERIZATION SUMMARY

The NAPA facility is located at 1937 Van Horn Road in Fairbanks, Alaska. The facility is located on the south side of Van Horn Road in the Fairbanks North Star Borough (FNSB), just south of the City of Fairbanks boundary. The facility served as a retail automotive parts store, paint shop and warehouse distribution center servicing three NAPA stores in the Alaska Interior.

2.1 Site Description

The NAPA building was built on a previously undeveloped lot in 2005 and is comprised of a single steel building surrounded by driveway access and parking areas to the north, east, and south. The building was located on a structural gravel pad built up several feet above the original ground surface to provide positive drainage away from the building across the parking and driveway areas. Most of the parking and driveway areas to the north and east of the building were surfaced with recycled asphalt paving (RAP). The RAP also extended approximately 10 feet to the south of the building. Property access is from Van Horn Road to the north and Sheldon Avenue to the south. Sheldon Avenue is an unimproved gravel thoroughfare with mostly undeveloped properties to the south.

The adjoining property to the east is an undeveloped lot that is primarily vegetated with grasses and small shrubs. The elevation of the surface of the eastern property is approximately three to five feet lower than the NAPA building. The property to the west is a bar (Club Soda) and liquor store (Gold Star Liquor). This building is slightly lower than the NAPA building and also has positive drainage away from the building. Van Horn Road is about the same elevation as the NAPA building, while Sheldon Avenue is several feet lower. Vegetated storm water drainage ditches exist to the north and west of the lot and are connected via culverts beneath access driveways. The southern portion of the site and property to the east have vegetated topographic depressions that collectively act as a ditch for Sheldon Avenue, but are not as well defined as the ditches on the northern and western sides of the property.

For project purposes, the perimeter drainage ditches were defined by geographic location relative to the NAPA building (west, northwest, north, northeast, east, south) and whether on-Site (within the property boundary) or off-Site (within an adjacent property boundary). Several ditches are generally contiguous, but addressed separately in this report for clarity and so locations can be quickly differentiated from the rest of the report. The developed portion of the site is divided into the RAP area and the building perimeter. The building perimeter also includes the structural gravel pad beneath the building.

2.2 Organization and Personnel

NAPA

Dean Jazzo is the local Area Manager and primary point of contact for NAPA. Ray Jusak with Beacon Recovery assisted NAPA with monitoring cleanup activities. Genuine Parts Company (GPC), the parent company of NAPA, also had a team of environmental and risk managers monitoring the activities at the Site through Mr. Jazzo and Mr. Jusak.

NORTECH

Peter Beardsley, PE, Environmental Engineer of ***NORTECH***, is the Contract Manager and has contractual responsibility for the project. Mr. Beardsley directed activities for the project and is the principal point of contact. He coordinated and oversaw the input and efforts provided by each of the other ***NORTECH*** employees involved with the work.

Jason Ginter, Principal Chemist for ***NORTECH***, oversaw much of the initial field work. He has remained involved in the project providing waste disposal and other technical oversight from ***NORTECH***'s Juneau office.

Andy Croan, EIT, Environmental Engineer of ***NORTECH***, has been the Field Manager in charge of the project Site during hazardous and solid waste removal efforts, corrective actions, and site characterization efforts. Mr. Croan directed the day-to-day activities of personnel working at the Site.

John Hargesheimer, PE, CIH, Principal-In-Charge of ***NORTECH***, is the QC Manager for the project. Other ***NORTECH*** staff involved with the project efforts at the Site included: Ron Pratt, Doug Dusek, Ashley Bruce, Kelly Cannon, and Stephanie Dunham. Other technical and administrative staff also provided support for this project.

A number of contractors were involved with the cleanup activities at the site. Emerald Alaska (Emerald) provided emergency cleanup workers, spill response materials, a vacuum truck, and other equipment that was used during cleanup of both the interior and exterior of the building. Inland Petroservice (Inland) also provided a vacuum truck, other equipment, and personnel that were involved in the exterior cleanup work. M&M Constructors (M&M) and Great Northwest (GNI) provide heavy equipment for exterior building work. RDM Sanders (RDM) constructed the building in 2005 and provided building construction details during the emergency response and then provided personnel and equipment during removal of damaged non-hazardous items from the retail portion of the facility for disposal.

2.3 Firefighting Activities

The NAPA building was partially destroyed by fire on Thursday May 26, 2011. The fire started on the southern wall of the building and consumed much of the southern portion of the building. This portion of the structure was used as warehouse and interior vehicle parking. An unknown volume of oil was present in this area, but was larger than normal due to the recent arrival of a shipment of new product. The fire also caused extensive damage to the northern retail section and the paint shop. The facility contained various automotive products including petroleum, oils, lubricants, glycol, paints, solvents, batteries, other automotive fluids, cleaning products, and automotive parts.

Approximately 300,000 to 500,000 gallons of water were estimated to have been used during firefighting. This firefighting water acted as a transport mechanism for free-phase and dissolved fluids outside of the building and across the site and to adjacent properties. The quantity of oil-based products present was not estimated. Additionally, the ratio of the volume of fluids, both water and products, consumed or evaporated by the fire to the volume that was transported across the surface is not known. Surface runoff primarily drained from the store in three general areas: the north entrances (front), the south warehouse entrance (back), and east warehouse entrance. Surface transport appeared to have been relatively rapid across the sloped RAP and packed gravel surfaces with minimal ponding. Surface run-off in vegetated and silt areas was generally slower and the uneven surfaces resulted in some ponding.

After the fire, seepage of emulsified water and product continued from both warehouse entrances (south and east). Additional fluid seeped from the building’s west wall, near the southwest corner. Contamination on the north, east, and south sides appeared to be primarily oils, with different colorless liquids, based on appearance and odor. The west side contamination appeared to be a greater concentration of paints, paint solvents, and possibly glycols intermixed with oils. Surface soils along the north half of the west end of the building appeared to be minimally affected by the firefighting efforts. No seepage was observed migrating from the northern building perimeter into the West Ditch.

2.4 Initial Response and Source Control

NORTECH coordinated Site spill response and cleanup operations as a consultant to NAPA beginning May 27, 2011. Emerald and Inland provided equipment, supplies, and personnel. ADEC outlined initial response activities. As building access was limited first by the fire department and then by structural concerns, initial response for the first several days was focused primarily on the perimeter ditches. Exterior building cleanup included collection of oily water residue on ground surface south of the building. Grossly contaminated soil outside of the ditches and driveways was removed by Inland using a skid steer loader.

As building access was limited, initial response also included containing seepage of contaminants from inside the building. Visibly stained gravels resulting from runoff were prevalent around the southern half of the building. ADEC requested excavation of a shallow trench around the building and placement of absorbent pads and booms.

This required the removal of RAP and up to six inches of gravel below, at the building/RAP edge. The building perimeter boom and absorbents were maintained and replaced as necessary.

Although the perimeter ring was effective at limiting surface migration, removing the source of the seepage was necessary to stop the migration of oily sludge from the building across the ground surface. Starting May 30, a vacuum truck was used to remove fluids pooled on the floor of the warehouse. As the building was not structurally safe for entry, fluid removal was limited to accessible building areas using “stingers” attached to the vacuum truck hose. Approximately 500 gallons of liquid waste was removed from the floor, which was transferred to 55-gallon drums.

On May 30, 2011, a representative from Golden Heart Utilities (GHU) was on-site to identify and mark utility locations. The GHU representative and ***NORTECH*** personnel inspected the cleanout trap directly east of the NAPA building, and the nearest down-gradient manhole. Two floor drains located in the south end of the building were determined to connect to the GHU wastewater collection system. No visible or olfactory indications of contamination were observed at the cleanout trap or the manhole. Air monitoring within the manhole with a PID did not detect any VOCs. WWTP operators did not identify any influx of waste materials during or after the fire.

Thin layers of floating oil and petroleum sheen were observed floating on the ponded water in all perimeter ditches on May 27. Free-phase liquids were initially skimmed using vacuum trucks and sorbent booms and pads. Soil berms and culvert plugs were used to segregate the ditches to limit contaminant migration. Bird hazing material was installed within each perimeter ditch before cleanup and characterization activities to prevent injury to wildlife. Cleanup crews removed trees and shrubs, in order to use sorbent pads and booms to remove remaining free-phase contaminants. Due to concerns that dissolved contamination could migrate through the bottom of the ditches, the water and any remaining product or sheen was removed by May 31, 2011. Approximately 28,000 gallons of contaminated water was recovered and containerized in onsite storage tanks for appropriate disposal.

M&M Constructors supplied heavy equipment and personnel for completing excavation of contaminated soils from the ditches, and stockpile construction at the property from June 1 – 7, 2011. Utility locates and manual confirmation of the Van Horn Road Alaska Department of Transportation & Public Facilities (ADOT&PF) right of way (ROW), were completed in the ditches before excavation. Shallow trenches were also excavated in each ditch from one to two feet below ground surface (bgs). ***NORTECH*** field screened soil from the trenches at various depths to determine the depth necessary to removed contaminated surface vegetation and soils. The excavation observations from the ditch areas are summarized below.

Visual observations in the North and Northeast Ditches indicated the root mass extended six to eight inches bgs. Soil at the bottom consisted of a few more inches of moist gravel underlain by silt. No odor or stained soil was observed at the limits of the excavation. In addition to these two northern ditches, the off-site Northwest Ditch was excavated at ADEC's direction, although contamination had not been observed during the previous response activities. Limited standing water was observed in the three northern ditches during subsequent heavy rain events, but no sheen or other evidence of secondary source contamination was observed.

A small berm limited runoff in the eastern direction, but was washed out in a few locations and allowed a limited quantity of water to migrate onto the adjacent property to the east. In order to better delineate characterization and remediation efforts, this area to the east has been subdivided in this report and figures into the East Northern and East Southern Ditches. The East Northern Ditch was more of a shallow low area that acted to channel the limited quantity of water along the edge of the adjacent property to the north and south. Only a limited volume of water and/or oily residue was observed. Visible soil staining was not present between the two eastern ditches, where the ground was slightly higher. The East Southern Ditch was a larger depression near an old driveway extending east. During excavation in these two ditches, frozen silt with visible ice was observed at a depth of approximately 8-12 inches bgs.

Three distinct drainage ditches exist south of the NAPA building: the South, Southeast, and Southwest. The South and Southeast Ditches are oriented in an east-west direction along Sheldon Avenue, where the South Ditch is located on-Site and the Southeast Ditch is located on the adjacent eastern property. The Southwest Ditch is oriented north-south along the western property boundary. The South and Southeast Ditches initially contained water with observable free-phase contaminants floating on the surface. The Southwest Ditch contained water, but no observable free-phase contamination or sheen. No evidence of firefighting water or oily vegetation between the Southwest Ditch and the NAPA building was observed. Field screening results following visible contamination excavation showed little or no evidence of contamination within 12 inches of the ground surface in any of these ditches. Limited standing water was observed in the South and Southeast Ditches during subsequent heavy rain events, but no sheen or other evidence of secondary source contamination was observed.

The West Ditch, oriented north to south, is present along the western boundary of the NAPA property. The northern end of the West Ditch is approximately 35 feet northwest of the NAPA building's northwest corner and the southern end is approximately 40 feet north of Sheldon Avenue. The northern portion of the West Ditch (adjacent to the building) is located on the NAPA property and referred to as the West Ditch. The southern portion is located on the adjacent property to the west (Club Soda) and is referred to as the West Southern Ditch in the field notes. These ditches were not connected to the other ditches on the south side of the property.

Contamination in the West Ditch appeared to be primarily from contaminated water and seepage runoff from inside the building after initial response activities. Most liquids were adjacent to the building. Staining in the West Southern Ditch indicated that the fluid depth was not greater than a few inches at the southern extent. Seepage in the West Ditch appeared as a viscous combination of paint (various colors) emulsified with petroleum and solvents (based on odors) with little to no visible water. The greenish tint to some of the remaining fluids suggested glycol was also present in the West Ditch and was subsequently observed seeping from the building interior. These observations were consistent with the known storage of paint products and associated thinners/solvents along the western interior wall of the building and the storage of glycol products in the southwestern portion of the warehouse.

Initial excavation in the West Ditch was limited by the structural prism beneath the foundation. The gravel pad along/beneath the building extended to the elevation of the bottom of the concrete foundation slab footers. Excavation of the southern ditch portion was to approximately 12 inches below the existing ground surface. Excavation immediately west and southwest of the building was up to two feet below the existing ground surface.

Approximately 1,300 CY of visibly contaminated soil was excavated during the initial cleanup activities. These contaminated soils were stockpiled in six onsite locations based on the source material, with approximately 1,100 CY from the perimeter ditch excavation located east of the building. The remainder, located in smaller stockpiles, was from the West Ditch and locations south of the building. These stockpiles were sampled for disposal in general accordance with ***NORTECH's*** Waste Management Plan dated May 31, 2011. The stockpiled soil was later transported off-Site for remediation as detailed in the separate Waste Management Report (WMR).

The building was stabilized, which facilitated further remediation activity. Removal of the damaged product containers inside the building began June 7, 2011. Concrete anchors were placed south of the NAPA building and guy wires were attached to the building structural beams to provide support. Additional scaffolding was constructed inside the building to support damaged beams. Between early June and mid-July, Emerald removed several loads of hazardous materials from inside the building and containerized the waste for temporary storage until transportation to an appropriate TSDF. Emerald containerized wastes in drums, 1 CY boxes, 1 CY bags, and 5 CY bags, depending on the type and volume of waste. Containerized waste was stored at multiple temporary storage areas at the site and many containers were transported for temporary storage at the Emerald warehouse, due to space limitations on the site.

2.5 Waste Management

Waste sampling, removal, and disposal details are summarized here, but refer to the NAPA WMR for the full report. Waste sample results that were used for initial site characterization are also discussed in the July 2011 Characterization and Corrective Action Plan (July 2011 CA Plan), which provided the basis for the work described in this report.

Waste streams from the NAPA property were comprised of three main categories: hazardous waste (regulated under the Resource Conservation & Recovery Act (RCRA)), non-hazardous contaminated waste (non-RCRA waste), and non-contaminated solid waste. Emerald disposed of the RCRA waste streams using approved Transport, Storage and Disposal Facilities (TSDFs). Contaminated non-RCRA wastes were also disposed of by Emerald, with the exception of soil that was treated and disposed of at OIT. Uncontaminated solid waste metals were recycled and uncontaminated solid waste debris, such as wood shelving, parts packaging, and similar materials were disposed at the FNSB Landfill. After wastes were transported off-Site, ***NORTECH*** completed field screening and testing of waste storage areas as described in Section 4.2 in this report.

2.6 Results Following Initial Site Investigation and Corrective Action

Waste characterization was completed during initial response using sampling of oily sludge and inventory material safety data sheets (MSDS). Between June 9 and June 11, a subsurface soil and groundwater characterization investigation of the building perimeter was conducted. This initial characterization effort included laboratory samples of source material (oily sludge), secondary source materials from the drainage ditches (water, free-phase oil, and grossly contaminated soil), and secondary source soils remaining in place after initial corrective actions. Samples were analyzed for a broad range of potential contaminants referred to as the “full suite,” including:

- Gasoline Range Organics (GRO) by Method AK101
- Diesel Range Organics (DRO) by Method AK102
- Residual Range Organics (RRO) by Method AK103
- Volatile Organic Compounds (VOCs) by EPA Method 8260
- Semi-VOCs (SVOCs) by EPA Method 8270
- TAL 23 Metals by multiple EPA methods
- Ethylene and Propylene Glycol by EPA Method 8015
- Dioxins by EPA Method 1613

Fifty-one initial characterization samples were collected including 19 waste characterization samples, 27 soil samples and five groundwater samples. All samples were submitted to SGS North America, Inc. (SGS) Laboratory for analysis. Glycols were analyzed by Bio-Chem Labs in Grand Rapids, Michigan. Dioxins were analyzed by SGS in Wilmington, North Carolina.

The June 2011 corrective action, field investigation activities and sample results are discussed in detail in the July 2011 CA Plan in Appendix 9, and summarized below. Summary result tables are presented in Appendix 2. Copies of laboratory reports and completed ADEC laboratory data quality review documents are presented in Appendices 7 and 8 respectively. Regulatory cleanup levels are discussed in Section 3.2 of this report. This data was used to develop the sampling and analysis program that is the basis for this report.

Structural Gravel Pad Soil

Ten soil borings (B1 through B10) were advanced around the southern building perimeter within the structural gravel pad as shown in Figure 4. Borings B2 and B3 located near the southwest building corner were advanced at an angle to evaluate the potential for contamination beneath the concrete slab. Boring B3 extended about 18 inches inside the concrete footer to an estimated depth of seven feet. The measured depth shown in the boring log is corrected for the angle and to the surface elevation of the concrete slab.

Visual observations confirmed the structural gravel fill extended approximately 10 feet below the top of the concrete pad. The gravel bottom was saturated and underlain by a silt layer several feet thick. The perched water was most likely runoff from firefighting, since precipitation was limited prior to the fire. The moisture extended less than eight inches into the silt layer, followed by several feet of dry silt and sand. Saturated gravel was observed again approximately 14 feet below the slab surface and appeared to represent the actual groundwater surface at the time of the soil borings.

Field screening results ranged from zero to 126 parts per million (ppm) using the photo-ionization detector (PID). The highest readings were recorded within two feet of the June 7-11 ground surface elevation, which was two to three feet below the original ground surface. Most borings showed lower field screening results with depth in the gravel pad, followed by elevated results at the saturated gravel/silt interface. Angled boring (B3) field screening results were lower than or similar to results in the adjacent vertical B4 boring, indicating minimal horizontal contaminant migration in the gravel immediately below the slab.

Nine laboratory soil samples were collected from the highest field screening results from soil borings B4 and B6. Boring B4 was located near the southwest building corner in the paint seep zone, and B6 was located near the east warehouse door seep zone. Eighteen additional soil samples were collected from other borings at the highest field screening results to confirm B4 and B6 laboratory results. No laboratory samples were collected from clustered borings B1, B2, or B3 due to their close proximity to B4.

Soil boring lab results are presented in Table 5 of Appendix 2. Sample B5 2-4 (feet) was a field duplicate of B4 2-4 (duplicate pair (DP) 2). Results indicated the highest contaminant concentrations were in the top 2-4 feet of the structural gravel pad and generally around the southern half of the building. DRO was detected in concentrations above the ADEC cleanup level in samples DP2, B6 0-3 and B9 2-4, and RRO was detected in concentrations above the cleanup level in samples DP2 and B6 0-3. Several VOCs were also present in DP2 and B6, but benzene and tetrachloroethene (PCE) were the only VOCs exceeding ADEC cleanup levels.

Contaminant concentrations generally decreased with depth until the gravel/silt interface approximately 10 feet below the concrete slab surface. At this depth, petroleum compounds and VOC concentrations increased slightly in B4 and B9, but remained below cleanup levels. Metals except arsenic, SVOCs, and dioxins were not present at concentrations near ADEC cleanup levels. Arsenic exceeded the ADEC cleanup level in several samples, but was below the documented Fairbanks background level.

For glycol, the highest concentrations were detected at the gravel/silt boundary instead of the first two feet of depth. In borings with multiple samples tested, glycols were generally present near the surface and decreased with depth. However, the highest glycol concentrations were generally observed at the gravel/silt interface 10 feet below the concrete slab. Samples B4 10-11 and B9 10-11 had ethylene glycol results of 290 mg/Kg and 640 mg/Kg, respectively, above the ADEC cleanup level of 190 mg/Kg. This suggests that the glycol, which readily mixes with water, was transported by the firefighting runoff that migrated beneath the slab. This mixture rapidly drained through the gravel pad to the silt layer. Some glycol appears to have been adsorbed to the fine-grained silt at this interface, while the remainder passed through with the water to the groundwater and appears to have dispersed fairly quickly in the aquifer.

Borings B13 and B14 were advanced in the north half of the building perimeter. B13 was advanced at the northwest building corner, and B14 was located on the building's north side center approximately 10 feet north of the building. Field screen samples were collected in one-foot intervals from boring cores. B13 showed structural fill to 10 feet below the top of the concrete slab. Field screening results were less than 10 ppm, indicating no vertical migration along the northwest perimeter. Elevated PID readings (up to 49.5 ppm) at the interface between structural gravels and native sandy-gravel indicated contamination at and below the interface. Two soil samples were collected. Laboratory results at and below the interface were non-detect except for low levels of RRO, some VOCs, and ethylene glycol; all below ADEC cleanup levels.

B14 was advanced to saturated, sandy gravels at 13 feet below the top of the concrete slab. PID readings ranged between 4.1 and 7.1 ppm, indicating no surface contamination, no vertical migration of contamination and no smear zone contamination from horizontal groundwater migration along the building's north perimeter. Two laboratory samples were collected at the highest field screening results. Laboratory results were non-detect except for very low levels of ethylene glycol at the 9-11 foot depth which were below the ADEC cleanup level.

Western Ditch Soil Sampling

Field screening conducted in the West Ditch following the initial response excavation indicated contaminated soils remained in portions of the ditch; especially in the most heavily impacted areas and in areas containing the root structures from removed vegetation. Three soil borings (B10 through B12) were advanced in the West Ditch. Depths of samples in these borings were measured from the top of the building slab for normalization, not from the ground surface. The three soil borings were consistent with native soils outside the gravel foundation pad perimeter, including naturally deposited silts and sands with varying organic content. The results from these borings indicated contaminants remaining in the West Ditch were most likely limited to the upper two feet of soil at the location of B10 (112 ppm) and B12 (105 ppm). Screening results less than 10 ppm indicate no contamination was present in the vicinity of B11.

Laboratory results from the B10 and B12 soil borings confirmed concentrations of DRO, RRO and PCE above the ADEC Method Two Cleanup Levels were present in the upper two feet of remaining surface soil, several feet below the surface of the slab. The highest elevation sample from Boring B10 is labeled from 4.5-5.5 and the highest elevation sample from B12 is labeled from 6.5-8 to reflect the depth relative to the west side of the concrete slab. Naphthalene, n-butylbenzene and ethylene glycol contaminants were also detected in these soils, but all concentrations were well below ADEC cleanup levels. GRO was detected in the B10 sample and toluene and 4-isopropyltoluene were detected in the B12 sample, both in concentrations below ADEC cleanup limits.

DRO and RRO were the only contaminants detected in samples from these borings more than two feet below the ground surface (6 – 8 feet below the slab), but at concentrations below the ADEC cleanup levels.

Groundwater Sampling

Monitoring wells (MWs) were installed at the B10 (MW1) and B11 (MW2) locations. The two MWs were constructed using pre-packed 1 ½ inch diameter PVC well casings and installed using direct push techniques. Each well was developed and purged prior to sampling. Three groundwater samples (two primary and one duplicate) were collected on June 11 and 13 and the results are summarized in Table 4.

The laboratory results from MW1 and MW2 indicated several VOC compounds were present, but in concentrations at least one order of magnitude below established cleanup limits. Ethylene and propylene glycol were detected in MW1, but in concentrations below the cleanup limits. Glycol compounds were not detected in MW-2. However, an additional sample was collected from MW1 on June 30 and analyzed for glycol only, and the concentration of ethylene glycol was above the ADEC cleanup level, while propylene glycol was present in a concentration below the cleanup level.

2.7 Groundwater

Regional Groundwater

Contaminated sites in this area have historically been difficult to assess due to the presence of a discontinuous tight saturated silt soil formation. The silt layer at one nearby site varies between 8 and 12 feet below grade. At another site, the silt layer retains water and acts as an aquitard about eight feet bgs, with a dry gravel layer present between the silt layer bottom and water table at 12 feet below grade. Silt pockets at other nearby sites have been observed at this depth range. While this silt material at the NAPA Site varies between dry and saturated, movement of both water and contamination through this material is expected to be slow or non-existent.

Studies by the USGS and at other contaminated sites have indicated that the regional aquifer has a much higher hydraulic conductivity than typically encountered with a gradient generally to the northwest, regardless of the season. The higher regional hydraulic conductivity is due to the presence of much coarser sands and gravels across the Chena/Tanana floodplain, evidenced by the gravel mining operations to the south of the site. This data indicates that the Tanana River generally acts to recharge the aquifer while the Chena River acts as a drain. At this distance from the Tanana River, very little deviation in the hydraulic gradient would be expected due to seasonal fluctuations in river levels or precipitation.

Groundwater wells are normally in the deeper gravel formation due to the much better recharge. Additionally, ADEC drinking water guidelines have recommended that drinking water wells be at least 30 to 50 feet deep to avoid potential impacts from surface activities or nearby surface waters. The GHU public water system serves the area and a limited well search indicated that only one drinking water well was potentially in use in the area down-gradient of the NAPA building. This well was tested and no contamination was identified.

Site Groundwater

A silt layer exists from about six to eight feet below grade, and appears to hold a limited amount of perched water above the regional groundwater aquifer normally present between 10 and 15 feet below grade. The silt formation is generally expected to be saturated with limited potential for contaminant migration. Water sampling in the perched layer is not considered representative of actual groundwater conditions but may indicate potential exposure pathways involving contaminant migration downward. This layer is present beneath most of the site, but may not be continuous. The gravel formation is expected to be more representative of the regional aquifer with greater potential to move contaminants off-site.

3.0 METHODOLOGY

The site characterization and corrective action activities were reviewed and approved by ADEC in the CA Plan dated July 20, 2011 and the amendments through Revised Amendment Four, dated September 9 (Appendix 9). Field work was completed from September 20, 2011 through October 20, 2011. The following describes the field screening and laboratory sampling methodology used by ***NORTECH*** at the Site.

3.1 Methodology Overview

The approved work plan included both additional corrective action and further characterization of the site. Corrective action generally consisted of excavation of visibly stained soils that were observed in multiple locations following completion of initial spill response activities. These areas were excavated for characterization and disposal and included the ground in the immediate vicinity of the building as well as isolated areas that were not surface scraped or excavated during spill response.

Following surface inspections and scraping, the resulting ground surface in each ditch area, parking area, or driveway area was characterized. This included field screening and laboratory sampling in each area, using a 12.5' by 12.5' sampling grid. At locations with previously documented contamination, more focused characterization and closure sampling was undertaken.

Following the surface inspection and sampling, vertical investigation of each major area of the site was completed. This consisted of one soil boring and groundwater temporary sampling point (TSP) advanced at the location of the highest field screening result in each area to characterize sub-surface soil and groundwater. When utilities or other obstructions were encountered, the boring locations were moved to the next highest field screening location in that area. One laboratory sample was collected from each soil boring at the highest field screening depth. Samples were analyzed for the Site COCs (Section 3.3) as outlined in the CA Plan and modified following field observations and initial laboratory results.

Laboratory samples were also collected from the TSPs. This consisted of sampling the perched groundwater to determine if the previously observed contaminated surface water had migrated down to the impermeable silt layer. Sampling of the regional groundwater aquifer was conducted from MW1 and MW2 in the West Ditch and at up-gradient and down-gradient TSPs.

3.2 Regulatory Cleanup Levels

The ADEC Method Two Cleanup Levels, as defined in 18 AAC (Alaska Administrative Code) 75, were used to assess whether COCs for the Site pose a potential threat to human health under a variety of exposure conditions. Based on historical precipitation data, Fairbanks is considered within the “under 40-inch zone” of Alaska. The Method 2 migration to groundwater cleanup levels for soil are included in the laboratory data summary tables provided in Appendix 2. These are typically the most conservative (lowest) cleanup levels. Meeting the Method 2 migration to groundwater cleanup level generally results in ADEC's closure of a site and unrestricted use of the site, including residential use. Inhalation and ingestion screening levels are also listed in 18 AAC 75 Tables B1, B2 for reference purposes. Table C of 18 AAC 75 provides groundwater cleanup levels that are based on the drinking water standards, for closure of contaminated sites in Fairbanks. The Table B Method 2 migration to groundwater soil cleanup levels and the Table C groundwater cleanup levels are included with the laboratory results in the results summary tables in Appendix 2.

As an alternative to the Method 2 soil cleanup levels, ADEC Method Three combines risk assessment, risk management, and site assessment principles to develop site-specific cleanup levels protective of human health and the environment (18 AAC 75). This method allows for use of site-specific soil data, aquifer data or both, and commercial/industrial exposure values without performing a full risk assessment under Method Four. Method Three allows determination of site-specific alternative cleanup levels for the soil exposure pathways.

As indicated above, results from the characterization activities at this site have been compared to Method 2 cleanup criteria in this report. This does not preclude the future use of Method Three or Method Four to evaluate site-specific risks and develop site-specific cleanup levels for the long-term management of the site.

3.3 Contaminants of Concern

Initial analytical sampling described in Section 2 was conducted to identify Site COCs and characterize remaining contaminants within the vicinity of the NAPA building structure. The possible COCs were grouped together by laboratory analytical method and results of initial samples are discussed below.

Petroleum Fractions

The primary petroleum fractions are gasoline range organics (GRO), diesel range organics (DRO), and residual range organics (RRO). These are quantified using analytical methods AK101, AK102, and AK103, respectively. Each of these fractions has exceeded the ADEC cleanup level in one or more samples, consistent with site observations that most liquids in the warehouse were petroleum-based lubricants such as motor oil. The petroleum fractions, particularly the relative concentration of DRO to RRO, are indicative of contamination from the release at this site and are primary contaminants of concern across the site. The DRO results at the site are not consistent with diesel fuel or heating oil. This was expected as these products were not present at the site as retail products or to heat the building, which utilized a natural gas fired furnace.

Volatile Organic Compounds

Approximately two dozen VOCs were detected in the oily sludge, water, and soil samples. These included standard petroleum components; such as benzene, ethylbenzene, toluene and xylenes (BTEX); tri-methylbenzenes; naphthalene; and other individual components of petroleum mixtures. VOCs also included a variety of solvents such as tetrachloroethene (PCE), trichloroethene (TCE) and styrene, as well as paint-related compounds such as methyl ethyl ketone (MEK) and methyl isobutyl ketone (MIBK). While many of these were detected in the oily sludge observed within the building, benzene, toluene, ethylbenzene, PCE, and TCE were the only VOCs detected near or above the ADEC Method 2 Cleanup Levels in soil samples at the site. Of the VOCs, benzene and PCE are considered primary indicators of the compounds released at this site.

Semi-Volatile Organic Compounds

Seven SVOCs were detected in one or more oily-sludge, water, and soil samples. These appear to be generally related to petroleum components and possible byproducts of incomplete combustion. None were detected at levels approaching the ADEC Method 2 Cleanup Levels, even in oily sludge representative of the source material. While SVOCs were initially considered COCs, SVOC analysis was discontinued based on the results of the initial characterization.

TAL 23 Metals

The Fairbanks area is known to have naturally occurring metal concentrations in soil and groundwater exceeding ADEC cleanup levels. The Army Corps of Engineers Alaska District published *Background Data Analysis for Arsenic, Barium, Cadmium, Chromium, & Lead on Fort Wainwright, Alaska* in 1994 to address elevated background concentrations of metals regularly observed in the Fairbanks area. While this data is specific to Fort Wainwright, ADEC routinely allows Fort Wainwright background concentration levels to be applied throughout Fairbanks.

Most of the Target Analyte List (TAL) 23 metals were detected in one or more of the initial characterization samples. Many do not have ADEC Cleanup Levels and are generally not considered potential COCs. Review of the initial characterization laboratory data indicated most metals concentrations showed little or no relationship to petroleum or VOC contaminant concentrations in a specific sample, including waste characterization samples.

Arsenic and total chromium concentrations exceeded ADEC Method 2 Cleanup Levels in some initial characterization samples. Arsenic exceeded the ADEC cleanup level in multiple locations, but concentrations were within the Fairbanks background range and have no observable relationship with the other detected contaminants. One sample was submitted for chromium speciation to determine the concentration of the more toxic hexavalent chromium state to the naturally-occurring trivalent state. Both the trivalent and hexavalent chromium results met individual ADEC Cleanup Levels.

Initial characterization results indicated the concentrations of metals were related to natural sources, not the released contaminants. Additionally, the elevated total chromium level was determined to be the less-toxic trivalent species. Based on these results, additional TAL 23 Metals was discontinued except for samples collected from the highest field screening locations in the West Ditch and west building perimeter locations.

Ethylene and Propylene Glycol

Ethylene and propylene glycol were stored in the facility, although most bulk glycol storage was in an unattached connex that was not damaged in the fire. Glycols were detected in many project samples, including building vicinity soil and groundwater samples. The water-soluble compounds appeared to readily mix with firefighting water and to have traveled through the gravel pad into the natural silt formation beneath the gravel. Ethylene glycol was detected above the ADEC Cleanup Level within the west side structural gravel pad and MW1 in the West Ditch. Propylene glycol was detected a magnitude below the cleanup level. Due to solubility, these compounds were considered most likely to migrate off-site with the migration of groundwater.

Dioxin

ADEC requested dioxin analyses based on the potential creation of dioxin during thermal decomposition of chemicals identified on MSDS for some NAPA products. Dioxin sampling was completed on the oily sludge, five individual tanks containing drainage ditch water, and eight individual soil boring samples. Dioxin results indicated concentrations did not exceed cleanup levels in the source material (oily sludge), the primary transport mechanism (water), or the secondary source soils (soil boring samples within the structural gravel pad).

Additional dioxin testing was requested for PCE-contaminated soil disposed of by thermal treatment at OIT. Post-treatment dioxin sample results did not exceed cleanup levels. Based on the results, dioxins were not considered COCs and no additional dioxin analyses were considered necessary.

COC Summary and Laboratory Methods

The COCs established for the fall 2011 Site characterization activities were:

- GRO by Method AK101
- DRO by Method AK102
- RRO by Method AK103
- VOCs by EPA Method 8260
- TAL 23 Metals by multiple EPA methods (West Ditch & west building perimeter)
- Ethylene and Propylene Glycol by EPA Method 8015

3.4 Conceptual Site Model

The ADEC Contaminated Sites program requires the submission of an initial site-specific Conceptual Site Model (CSM) with a site work plan. ADEC has developed a standardized form for the CSM. While not explicitly required by the ADEC Spill Response Program, an initial Site CSM was developed to organize and evaluate Site risks and risk reduction objectives. An updated CSM was developed based on the results of the 2011 CA that are presented in this report. Both CSM forms are included in Appendix 5.

The initial CSM documents the conditions during the initial cleanup response and sampling effort. Mitigation of many potential exposure pathways was accomplished through institution of site controls, engineering controls, and safety measures to eliminate and/or minimize exposure to potential contaminants. Corrective action efforts completed to date resulted in the primary contaminant source(s) removal and removal of much of the contaminated secondary source soil. The updated CSM scoping form and graphic are discussed in Section 6 of this report.

4.0 FALL 2011 FIELD ACTIVITIES

This section summarizes the Fall 2011 characterization activities (visual inspection, field screening, and laboratory sampling) completed at the site. If soil was visibly contaminated or had a PID field screening result over 20 ppm, this material was excavated and the newly exposed surfaces were characterized again. Figures referenced throughout this section are included in Appendix 1. The figures illustrate field screening results and laboratory sample locations at the limits of excavation. Tables 1 and 2 in Appendix 2 summarize the laboratory data resulting from field screening efforts. Laboratory results are discussed in Sections 5 and 6 of this report. Boring logs for the soil borings are located in Appendix 3 and photographs of the project can be found in Appendix 4.

4.1 Perimeter Ditches

This section focuses on the northern, east, and southern ditches. The West Ditch field activities are discussed in Section 4.4. Figure D1 (D for Ditch) provides a graphic key to these ditch locations.

Northern Ditches

The north, northeast and northwest ditches, connected via culverts, are located along Van Horn Road north of the NAPA building. The North Ditch is on the NAPA Site, while the Northeast and Northwest Ditches are located on adjacent off-site properties. Figures D2 and D3 show field screening and laboratory sample locations in these ditches.

Ninety (90) field screening samples were collected from the North Ditch with four laboratory samples collected. Forty-one (41) field screening samples were collected from each of the Northeast and Northwest Ditches. Four laboratory samples were collected from the Northwest Ditch and two laboratory samples from the Northeast Ditch. Three laboratory samples were collected from each ditch from the highest field screening locations. PID results for all field samples ranged from 0.0 to 5.5 ppm, well below the suspect level requiring additional corrective action.

Soil borings were advanced at the highest field screening location accessible in each of the three northern ditches. Soil samples were collected from the highest field screening results within the boring cores. SB19 was located in the North Ditch. In the Northwest and Northeast ditches, the highest field screening occurred along the underground waste water utility line, so borings SB20 in the Northeast Ditch and SB21 in the Northwest Ditch were advanced in the next highest field screening location. TSP6, TSP7, and TSP10 were installed adjacent to borings SB19, SB20, and SB21, respectively and ***NORTECH*** collected groundwater samples as described in Section 4.5.

Following the characterization of the ditches, the culverts connecting the northern ditches were inspected and an oily residue was observed. The culverts were steam-cleaned by Fairbanks Pumping & Thawing to remove the oily residue. Wiping the interior of the culverts with a clean rag indicated that the oily residue had been removed. The covers were removed from culverts to allow normal operation.

Eastern Ditches

The East Ditch is located within the legal boundaries of the adjacent property and was divided into the East-Northern Ditch and the East-Southern Ditch, as can be seen in Figures D3 and D4. Forty-nine (49) field screening samples were collected from the East Northern Ditch, and three soil samples were submitted from the locations with the highest screening levels for laboratory analysis. Thirty-five (35) field screening samples were collected in the East Southern Ditch, and two were submitted for laboratory analysis.

Immediately after the fire, standing water was minimal in the East Ditch area and frozen soils were encountered less than one foot bgs during the initial cleanup effort. Based on these conditions, the potential for vertical migration of contaminants was considered minimal and no soil borings were considered necessary to further characterize the soil at depth. Field screening results ranged from 1.1 to 3.7 ppm, well below the suspect level requiring additional corrective action.

Southern Ditches

Four ditches were identified south of the NAPA building: the South, Southeast, Southwest and the West-Southern Ditches (Figures D4 and D5). Fifty (50) field screening samples were collected (2.4 to 5.5 ppm) from the South Ditch, and four laboratory samples were submitted with the highest results. One hundred twenty-three (123) field screening samples (0.6 to 6.8 ppm) from the Southeast Ditch, and nine samples were submitted for laboratory analysis. Eighteen (18) field screening samples (0.8 to 2.5 ppm) were collected from the Southwest Ditch, and two laboratory samples submitted. Forty-two (42) field screening samples (0.2 to 2.3 ppm) were collected from the West-Southern Ditch, but the only sample submitted for laboratory analysis was from the soil boring due to the limited area and volume of contamination in this portion of the ditch.

Soil borings SB15, SB16 and TSP3 (in SB16) were advanced at the highest field screening locations in the Southeast Ditch. Soil boring SB17/TSP4 was advanced in the South Ditch. Boring SB22/TSP 8 and field duplicate 9 in the West-Southern Ditch was advanced at a location based on ***NORTECH***/ADEC discussion. PID results from all four borings were less than 3.0 ppm. Standing water was limited in the Southwest Ditch and no evidence of free-phase contamination was observed during the course of cleanup activities, so no soil boring was considered necessary.

4.2 Former Waste Storage Areas

Waste storage areas were constructed after initial cleanup, using reinforced polyethylene liners over the ground surface. The NAPA WMR contains detailed information regarding the containerization and temporary storage of waste materials, as well as the removal and disposal of waste materials from the waste storage areas. Several of these temporary storage areas were constructed on top of visibly contaminated surfaces during the initial cleanup activities and no containment liners are believed to have failed during material storage.

Waste removal occurred from June through October 2011 and the locations of waste storage areas are shown in Appendix 1, Figure S1. Following removal of the wastes and the secondary containment systems, ***NORTECH*** inspected and characterized surface soils beneath the waste storage areas to identify potentially contaminated soils. Corrective action locations (contaminated soil removal) from these areas are generally referred to as “pits” or “surface staining”. Pits indicate excavation where the depth of contamination exceeded 12 inches bgs. Surface stains refer to excavation of less than 12 inches. Eight pits and six surface stains were identified within the former waste storage areas shown in Appendix 1, Figure S1. The cleanup details of these pits and surface stains are discussed in these sections and shown in figures R5 and R6, and S4-S7.

Eastern Stockpile

The eastern stockpile, Stockpile 1 (SP1) was located east of the NAPA building (Figure S3) and contained about 1,100 CY of impacted soil from initial ditch excavations. ***NORTECH*** constructed SP1 by excavating through the RAP surface to a depth of approximately 1.5 – 2 feet below surface, then lining the area with a heavy polyethylene liner. ***NORTECH*** visually inspected the soil below the RAP surface before liner placement, with no visible or olfactory contamination noted.

NORTECH conducted a visual inspection of the soil following stockpile removal and observed no contamination. Forty (40) field screening samples were collected and PID results ranged from 0.2 to 4.0 ppm as shown in Figure S2. Three soil samples (including DP8 SP1-SC32 and SP1-SC33) were collected from the highest field screening locations. Preliminary analytical results indicated the soils beneath SP1 met ADEC cleanup levels, except at the location of sample SP1-SC31. About 0.5 CY was excavated from this location, and subsequent field screening results were below background levels. Laboratory sample SP1-SC116 was submitted to confirm cleanup levels were reached following the removal of SP1-SC31. Although shown in Figure S2, the soil at the location of sample SP1-SC31 is no longer present at the site.

Southern Stockpiles

The locations of Stockpile 2 (SP2), Stockpile 3 (SP3), and Stockpile 4 (SP4) are shown in Figure S3. SP4 was also used as a staging area for vehicles and large equipment. Initial response south of the RAP included oily sludge removal with a vacuum truck, and scraping the upper six to eight inches of surface soils with a skid-steer and loader. ***NORTECH*** conducted a limited preliminary assessment following scraping and before stockpile construction in native silts and sands. The area also included Stockpile 7 (SP7), former storage of metal building materials and signs.

The area beneath SP2 was characterized with 25 field screening samples. Results ranged from 2.3 to 7.4 ppm as shown in Figure S2. Three soil samples were submitted for laboratory analysis from the highest field screening locations.

The soils beneath SP3 were characterized with 22 field screening samples shown in Figure S2. Results ranged from 1.8 to 15.3 ppm. Three (3) soil samples were collected and submitted for laboratory analysis. Preliminary lab results indicated the soils beneath SP3 met ADEC cleanup limits, except at sample location (SP3-SC40). Pit 8 (Figure P5) was excavated at this location, removing approximately 10 CY of contaminated soils. Twelve (12) field screening samples were collected from Pit 8 limits with results ranging from 3.6 to 8.1 ppm. Six (6) soil samples were submitted for laboratory analysis, including one field duplicate (DP16).

SP4 was located east of SP2. A visual inspection was completed following removal of SP4 and did not identify soil contamination or liner penetrations. Due to space limitations on the site, a new stockpile was constructed on the southern two-thirds of the SP4 footprint to store excavated RAP and contaminated soils from the West Ditch. Following approval of the CA Plan, the accessible soils beneath the former SP4 were characterized. The eight (8) field screening results are shown in Figure S2 and ranged from 3.3 to 4.6 ppm. No soil samples were submitted for laboratory analysis due to the limited area and background PID concentrations.

Following removal of SP7, visible contamination was observed and resulted in Surface Stain 1 (SS1) and Surface Stain 2 (SS2). Approximately 0.5 CY of contaminated soil was excavated to approximately 12 inches below grade from both locations. These locations and the six (6) field screening samples and two (2) laboratory samples are shown in Figure S7. For the remainder of the surface, 24 field screening samples were collected, with PID results ranging from 2.1 to 3.8 ppm. Three (3) samples were submitted to the lab from the area outside the surface stains.

Southeastern Supersacks and Tanks 4 & 5

The eastern edge of the lot was initially used as a waste storage area due to the relatively minor impacts observed immediately after the fire. Visibly stained surface material was known to exist under these storage areas. Additionally, a small linear drainage channel at the edge of the gravel pad had a limited amount of visible contamination. The storage area blocked this channel, but prevented excavation of the stained material. These storage areas are shown in Figures S2 and S3 as "Drums and Supersacks" and "Tanks 4 & 5". The initial containment liner and tanks were installed during the first few days of initial response.

The drums and supersacks (D/SS) waste storage area was constructed on top of visibly stained surface soil. The drums contained sludge and liquid from the initial cleanup. Supersacks contained a variety of materials that were segregated from other wastes, such as RAP that was suspected of having lead contamination from damaged batteries. The area was also used to stage non-hazardous wastes that were periodically removed from the site, such as wooden boxes of batteries. None of the containers appeared to have leaked and no penetrations of the liner were observed. No leaks were observed during transfers into or out of the 3,000-gallon tanks.

After removal of the drums, supersacks, and tanks, less than 20 CY of the visibly stained soil was excavated from areas Surface Stain 5 (SS5) and Pit 7. Nine field screening samples were collected from the limits of excavation in Pit 7 with results ranging from 1.9 to 15.8 ppm as shown in figures S6 and S7. Two of the highest field screening samples were submitted to the lab for analysis.

Thirteen (13) field screening samples were collected from SS5 excavation limits, which extended next to both the D/SS area and the T4/T5 area as shown in Figure S2. PID readings at the limits of SS5 ranged from 2.8 to 4.3 ppm. Three (3) samples, including one (1) field duplicate (DP14), were collected from the highest field screening locations and submitted to the lab for analysis.

Twelve (12) field screening samples were collected from soils left in place beneath the southeastern supersack stockpile area (Figure P3). PID results ranged from 2.3 to 4.3 ppm and two (2) soil samples were collected from the highest field screening locations for laboratory analysis. Fifteen (15) field screening samples were collected beneath the T4/T5 storage area. PID readings ranged from 2.6 to 4.7 ppm. Two (2) soil samples were submitted from the highest field screening locations for laboratory confirmation.

Southern Supersacks Storage Area

Wastes from within the building were placed into five-yard supersacks (5Y bags) and one-yard supersacks to the south of the building (Figure S3). Oily sludge was collected from the surface of this area, but the surface was not scraped and the soil was not field screened or sampled before stockpile construction and waste storage. A forklift transported the supersacks from the warehouse doors onto the storage liner. Additional polyethylene sheeting was used on top of the stockpile as cover during waste storage. Low-lying pockets between bags and supersacks collected rain and required occasional pumping away from contaminated areas.

During August 2011, one 5Y bag was identified as leaking during a waste storage inspection. Less than five gallons of oily sludge leaked into the secondary containment liner of this storage area. Universal sorbents were placed around the bag to contain and absorb the liquid waste. No liner penetrations were observed in this area.

After removal of the wastes and the liner, visibly stained soil was identified in areas labeled Pits 3, 4, 5 and 6 in Figure S2. Approximately 20 CY of contaminated soils were removed from the four pits and 20 field screening samples were collected at pit limits with results ranging from 0.2 to 6.5 ppm as shown in Figures S4 and S5. Four (4) soil samples were submitted for laboratory analysis and the pits were backfilled with gravel following excavation.

Fifteen (15) field screening samples were collected from the surface soils that were not visibly contaminated beneath the Southern Supersacks waste storage area. PID readings ranged from 1.4 to 6.6 ppm and two soil samples were collected from the highest field screening locations for laboratory confirmation. Preliminary laboratory results from sample 5Y-SC46 showed elevated DRO concentrations. Approximately one (1) cubic yard of soil was subsequently excavated and field screening indicated clean limits were reached. A sample and field duplicate (5Y-SC108 and 5Y-SC109) were collected for laboratory confirmation (Figure S2).

Interior Supersacks

Additional waste and debris were packed into one-yard supersacks and 55-gallon drums inside the building. These waste containers were stored primarily in the less-damaged northern portion of the structure. A floor inspection prior to the waste storage noted an ashy/charcoal residue on the floor and minimal oily waste or liquid contamination. No damaged containers were observed and a visual inspection beneath the storage area following waste removal did not identify any indications of compromised or leaking supersacks or drums. Following removal of the wastes, Emerald cleaned the entire concrete floor prior to disassembly of the building.

Building Waste Stream Storage Areas

CEI demolished the NAPA building in early October 2011. Materials were reused, recycled, or disposed. These materials included metals, non-metals, and NAPA-requested items for transfer to other NAPA facilities in Fairbanks. Waste material from building demolition was either directly placed into 20-cubic yard side-dumps for transport, or temporarily stored on the concrete pad or adjacent northern RAP surface for a short period of time prior to transport. NAPA-requested items were generally stored on the gravel pad adjacent to the North Access Driveway. Inspection beneath these materials was not considered necessary because the building demolition waste is not considered hazardous or expected to result in additional stained soil or other environmental concerns.

4.3 Driveways

The RAP surface covered much of the parking and driveway areas immediately surrounding the building, extending almost to the edge of the gravel pad on the north and east sides. The remainder of the driveway areas, mostly south of the building, had a surface of compacted gravel. The driveway areas were divided into areas based on the location relative to the building. These areas are shown in Figure R1.

The RAP surfacing, an oil-based product impermeable to water, was in reasonably good condition along the north and northeast sides of the NAPA building foundation. The condition deteriorated with distance to the south and east with damage due to initial scraping of oily residue and vehicle traffic during response activities. Water flow from the firefighting effort also damaged the RAP, washing out areas along the northern and southern edges of the RAP and thinning interior areas. A visual inspection was completed in damaged or previously scraped RAP areas for signs of contamination. The RAP to the east and south of the building was extremely deteriorated, so the RAP surface was excavated and stockpiled on-Site. This stockpile was located south of the building, near the former location of SP2 and SP4. This material was given to a local paving contractor for reprocessing into new RAP.

North Driveway

A single 5,000-gallon ISO tank on a trailer, identified as Tank 7 (T7), was parked and stored temporarily on the western edge of the North Driveway. Inland swept the North Driveway RAP surface, to allow investigation of its integrity. The northern edge of the RAP was washed out from the flow of water, but visual observations suggested the integrity of the RAP across the northern parking area and North Access Driveway was adequate to prevent infiltration of contaminated water.

Since the interior surface of the RAP was intact, contaminants were most likely to be present at the perimeter edge of the remaining RAP. Forty-two (42) field screening samples were collected at 10-foot intervals in a linear fashion along the RAP perimeter at six (6) and 12 inches below the surfacing at each interval as shown in Figure R2. PID results six inches below ranged from 2.7 to 5.9 ppm and 12 inches below ranged from 1.7 to 6.3 ppm. Seven (7) samples were submitted for laboratory analysis.

East Driveway

One hundred six (106) field screening samples were collected following the removal of the RAP surface in the East Driveway (Figure R3). Field screening results ranged from 1.6 to 6.6 ppm. Soil boring SB18 was advanced within the East Driveway to a depth of 20 feet below top of the foundation pad and field screening results remained below background levels. Laboratory sample SB18-SC52 was collected at 13 feet from SB18. Laboratory samples were not collected from the East Driveway area due to building demolition and seasonal frost penetration. The East Driveway was considered substantially similar to the North Driveway (discussed above) and the Northern Building Perimeter (discussed below in Section 4.4) based on similar soil types, RAP integrity, traffic use, and field screening results. Additional laboratory sampling following building demolition was not considered necessary for this area.

South Driveway

The South Driveway area (Figure R4) is south of the NAPA building and consisted of areas that were not already characterized as part of a waste storage area. Spill response traffic was heavy in this area with primary access to the site coming from Sheldon Avenue. Surface scraping of the South Driveway removed some RAP and gross soil contamination. Sixty (60) field screening samples were collected and results ranged from 1.8 to 6.6 ppm. Three (3) samples (including DP17) were submitted for laboratory analysis.

During the visual inspection and area field screening, five (5) areas were identified for removal of additional contaminated soil: Pit 1, Pit 2, SS3, SS4 and SS6. The locations are shown in Figures R5 and R6. Pits 1 and 2 were located in the central portion of the south area, while SS3, SS4, and SS6 were located near the southern access. Each of these was characterized individually.

The final Pit 1 excavation (Figure R5) was about 10 feet by 5 feet with a depth of 2.5 feet. Approximately 5 CY of contaminated soil was excavated and 10 field screening results ranged from 0.4 to 7.8 ppm. Four (4) soil samples, including DP9, were collected for laboratory analysis from areas having the highest field screenings. Interim data review showed DRO and RRO concentrations approximately one order of magnitude below cleanup levels, except for the DP9 with DRO results exceeding cleanup levels. An additional 0.5 CY was removed in the DP9 location (south sidewall) and lab sample PIT1-SC107 was collected to confirm clean limits.

The Pit 2 excavation (Figure R5) was approximately 14 feet by 2.5 feet by 2.5 feet deep, resulting in excavation of approximately 3 CY of contaminated soil. The 10 field screen samples at final limits ranged from 0.4 and 10.5 ppm. Three (3) soil samples were collected for laboratory analysis from the highest field screening locations.

SS3 was located along the east side of the driveway. The stained area was approximately 220 square feet, while the depth was no greater than six (6) inches as shown in Figure R6. Approximately 2 CY of contaminated soil was excavated. The nine (9) field screening results ranged from 3.6 and 5.2 ppm with soil sample SS3-SC72 submitted for laboratory analysis.

SS4 was located west of SS3 and had an area of about 280 square feet with a depth no greater than six inches as shown in Figure R6. Approximately two (2) CY of contaminated soil was excavated from SS4 and the nine (9) field screening results ranged from 2.5 and 4.1 ppm. One soil sample (SS4-SC71) was collected for laboratory analysis.

SS6 was located south of SS3 on the east side of the southern driveway. The excavation area was approximately 300 square feet with a depth no greater than six (6) inches. Approximately three (3) CY of contaminated soil was excavated from SS6 and field screening results ranged from 2.8 and 4.1 ppm. One (1) soil sample (SS6-SC67) was collected for laboratory analysis.

4.4 Building Interior, Perimeter, and West Ditch

According to the structural engineer and contractor, the building was constructed on a non-frost susceptible (NFS) structural gravel pad. The structural non-frost susceptible gravel pad extends down to approximately 10-11 feet below the top of the concrete slab, and up to 15 feet from the exterior edge of the slab at the ground surface. The building foundation and structural prism of the building are within the gravel pad. The structural prism is the area within a 1:1 slope of the bottom of the footing to the ground surface. The installation of the structural gravel pad resulted in the removal of the silt layer that typically supports a perched water at other locations across the site.

In addition to this difference in soil type beneath/around the building, the building perimeter is discussed separately from the remainder of the site because of the proximity to the contaminant source. Additionally, the presence of the building and structural prism increased the complexity of the characterization and corrective action. The West Ditch is included in this section because most of the ditch is within the building structural prism. Figure B1 illustrates the areas discussed in this section.

4.4.1 Slab Interior Floor Drains

Two (2) floor drains are located in the south half of the NAPA building slab, one in the primary warehouse area (FD1), and the second (FD2) in the mechanical room. According to the architectural drawings, and through interviews with the property owner, the building contractor, and the plumbing sub-contractor, these floor drains were tied into the building's limited wastewater system. This system discharges to the GHU wastewater collection system with treatment at the GHU WWTP.

Following debris removal and floor clearing in September 2011, each floor drain was opened for inspection. Both drain systems contained liquid and failed to drain. Initial efforts to run a snake through the floor drain systems met with obstructions at the expected depth of the P-Traps. Emerald removed the surface liquid with a vacuum truck and fluid and debris was collected from both drains.

Following removal of the standing liquids, both drains were visually inspected with a rotoscope. FD1 was plugged with coarse sediment approximately 13-14 inches below the slab surface. The FD2 obstruction was not observed due to liquids remaining within the P-Trap. A pipe was observed entering into this drain system from the west, which appeared to be the tie-in from FD1. Fairbanks Pumping & Thawing cleared the blockages via steam and removed the remaining material. After this, both floor drains successfully drained liquids.

The rotoscope was used to inspect the cleanout on the east side of the building. The riser was free of any water or sludge material to scope limits (approximately six feet). A tie-in line was observed originating from the west and liquid from both floor drains was observed to pass through this cleanout. Both floor drain P-traps were winterized and capped before building demolition. No damage to the drains or piping was identified during these inspections, indicating the floor drains are not a secondary source of contamination beneath the slab. The building contractor confirmed that the wastewater line from the building goes north beneath the driveway and then turns east, tying into the manhole lift station in the utility easement on the north side of the east adjacent lot.

4.4.2 Northern Portion of Building

The northern portion of the building perimeter consists of the complete north half of the building, including the northern half of the east side (Figure B2 and B3). The northwest portion is shown in Figure B13. Thirty-two (32) characterization samples were collected at the edge of the concrete apron around the northern portion of the building at six (6) and 12 inches below the top of the concrete. Field screening results ranged from 2.7 and 9.7 ppm, except a result of 37.2 ppm at 12 inches below grade near the center of the north side. Visual/olfactory observations indicated the elevated field screening result was from floor cleaning solution that accidentally reached the soil. Three laboratory samples, including a duplicate pair, were collected for laboratory analysis.

4.4.3 Southeast Portion of Building

This portion of the site includes the southeast building perimeter (Figure B4). This area includes both the overhead doors to the warehouse section of the structure. To access contaminated soils along the foundation, the concrete apron and the south overhead door and 15 feet of apron at the east side door (including the two concrete bollards) were removed. Stained soil removal was limited to three (3) feet below the top of the slab due to the following constraints: (1) concrete slab/footings, (2) structural 1:1 slope, and (3) uncontaminated overburden soils outside the structural slope.

During this corrective action, contaminated soils were manually removed within three feet of the building perimeter in this area due to access limitations for heavy equipment, structural concerns, the ongoing demolition, and other site constraints. This included visibly contaminated material around the southeast corner along the structural prism slope. Heavy equipment was used to clean up the hand excavation area and extend the excavation to four-five feet from the building to a depth of approximately three (3) feet below the top of the slab. Approximately 15 CY of contaminated soil was excavated and transported for thermal remediation.

Site characterization was conducted at the limits of excavation, including the limits of the structural prism. Additionally, contamination within the structural prism was evaluated through manual horizontal auguring beneath the concrete slab. Fifty-six (56) field screening samples (Figures B5-B8) were collected with 21 samples submitted for laboratory analysis. Field screening results ranged from 2.6 to 358 ppm. The highest PID readings were observed slightly west of the southeast corner. Readings generally decreased to the north and west from the corner, confirming field observations of seepage from the building occurring at that corner. PID readings decreased with depth and distance from edge of the concrete. Elevated field screening results were observed above background at about five (5) feet under the slab near the corner. This distance decreased to less than two (2) feet to the west.

Piping for a vapor extraction system was installed adjacent to the concrete slab around this southeast portion of the building. The system was installed to expedite natural attenuation of contaminated soils through passive or active means where structural concerns limited excavation. The piping is 4-inch high-density polyethylene (HDPE) perforated pipe and was installed horizontally at the base of the foundation. The piping has elbow joints and solid risers at the two southern building corners that extend above grade. Each side of the building has an independent piping run. Pea gravel was placed around the piping and a reinforced polyethylene liner placed over the pea gravel. The liner extends approximately six (6) to eight (8) feet out from the concrete on each side. The system and liner were backfilled with structural gravel fill and compacted to 95% density.

4.4.4 Southwest Portion of Building

The southwest portion of the building perimeter includes the southern building perimeter west of the overhead door and the southern half of the west side of the building (Figures B9-B12). Four limits were encountered during corrective action in this area: (1) the concrete slab, (2) the structural 1:1 slope supporting the slab, (3) the buried waterline, and (4) uncontaminated overburden soils existing outside the structural slope. The buried water line runs in a north-south direction approximately four (4) to seven (7) feet west of the building. The water line elevation is approximately five (5) feet below the slab.

The southern side of the building was excavated to 3-4 feet below the top of the slab and 3-4 feet horizontally from the building until visually stained soils were excavated and/or the 1:1 structural slope was encountered. The excavation on the west side extended to the water line or the west ditch on the 1:1 slope from the bottom of the foundation. Approximately 15 – 20 CY of contaminated soil was excavated and stockpiled for thermal remediation. The vapor extraction and liner system discussed in Section 4.4.3 extends across the southern end of the building to the southwest corner. A separate section of piping extends north along the west side of the building.

Site characterization was conducted at the limits of excavation and manual horizontal auguring beneath the concrete slab was undertaken on the south and west sides of the building. Ninety (90) field screening samples were collected from this area and 15 soil samples were collected for laboratory analysis. The field screening results ranged between 2.6 and 37.2 ppm. Elevated PID readings existed within a small 1-2 foot thick lens at the top of the structural gravel pad, as shown in Profiles F and G (Figures B10 and B12). PID readings were below background horizontally within three (3) feet of the edge of the concrete slab. Beneath the concrete slab, field screening results reached background levels about 2-3 feet from the edge of the slab.

4.4.5 West Ditch

The West Ditch (Figures B9-12) is a shallow drainage area west of the building along the property line with the adjacent property to the west (Club Soda). South of the NAPA building, the West Ditch jogs slightly to the west and is located on the Club Soda property. The buried water line that served the NAPA building was located at the edge of the 1:1 slope for structural integrity of the concrete slab in the West Ditch.

This section of the report focuses on the portion of the West Ditch that extends from the north side of the foundation to the jog onto the Club Soda property (Figure B1). The West-Southern Ditch was discussed in Section 4.1 (Figure D5) as a perimeter ditch. A former water well related to Club Soda was located south of the NAPA building on the edge of the West Ditch and is discussed in Section 4.5.2 below.

NORTECH completed West Ditch characterization and contaminated soil removal in mid-October 2011 as the building was being demolished at the beginning of winter. This was the final corrective action effort for the season. Depths shown on the figures have been normalized to the top of slab. Prior to corrective action, contamination in the West Ditch was visible within the root zone in the ditch bottom and eastward to the water line (Figure B12 Profile G). Work is summarized below by date:

October 12: Excavation was completed in the northern portion of the West Ditch. Forty-four (44) field screening samples were collected during excavation and at final limits (5-6.5 feet below top of slab) with results ranging from 0.3 to 32.1 ppm. The highest result was near the Club Soda buried heating fuel oil tank. This soil was left in place due to the proximity to this buried tank.

October 13: Excavation in the West Ditch was adjacent to the water line, from the north end south toward the building corner. Visibly contaminated soil and areas with elevated field screening results were removed until native gravel was encountered approximately 6-7 feet below top of slab. Twenty-five (25) field screening samples were collected at final limits with PID results ranging from 1.0 to 12 ppm. Two (2) laboratory samples WDX and WDXX were submitted for rush DRO, RRO and BTEX analysis and preliminary lab results indicated that these COCs were below the ADEC cleanup levels.

October 14: Site characterization work began with field screening the excavation limits (31 locations) and collection of laboratory samples (11 primary and one duplicate) on the West Ditch surfaces adjacent to the building and excavated during previous days. Once this was completed, field screening and sampling continued in the West Northern Ditch located between Club Soda and the NAPA North Driveway. This area covered approximately 300 square feet of gravel with some vegetation, but was not directly connected to either the North Ditch or the West Ditch. PID readings ranging from 0.8 and 1.3 ppm and soil sample WD-SC128 was submitted for laboratory analysis.

October 16: Excavation and field screening continued in the West Ditch near the water line by MW1 and south of the building near the unused Club Soda domestic water well (Figure B9). Field screen results during excavation ranged from 2.6 to 74 ppm.

October 17: Contaminated soil removal continued near MW1 and the water line based on two locations with elevated field screening results. Thirty (30) field screen samples were collected and results ranged from 0.0 to 24.5 ppm at the limits of these excavations.

During this work, approximately 125 CY of contaminated soil was excavated from the West Ditch areas. Excavated soils are currently stockpiled on Site. Following the final site characterization work described here, the West Ditch was backfilled and compacted.

4.5 Groundwater

Groundwater assessment occurred September 27-29 during the soil boring program. Samples were collected from the two existing monitoring wells in the West Ditch (MW1 and MW2), one off-property well (HW), and seven TSPs. Groundwater samples locations are shown on Figure 4 and in the respective ditch figures, including the existing wells within the West Ditch. TSPs were removed immediately following sampling. A groundwater sampling event June 13, 2011 and a follow-up sample collected June 30, 2011, are previously discussed in Section 2.7.

4.5.1 Perimeter Ditch and Structural Prism Groundwater

Seven TSPs were installed at the soil boring locations with the highest field screening results from perimeter ditches and near the building perimeter. TSPs were also located in a manner that would allow assessment of up-gradient and down-gradient aquifer conditions. A total of seven (7) samples were collected, including a field duplicate pair (DP12), and submitted for laboratory analysis. A moist organic layer from two (2) to 10 feet bgs was observed in six (6)borings and supports a localized perched water layer several feet above the regional groundwater aquifer. The findings of the soil boring program are discussed in more detail in Section 6.1. Since this water was most likely to be impacted from contaminated surface material, the groundwater samples were collected from the perched groundwater. Soil boring logs in Appendix 3 show the depths TSPs were screened and groundwater samples collected. Field visual and olfactory observations during purging and sampling did not indicate contamination within the groundwater.

4.5.2 Nearby Groundwater Concerns

NORTECH identified two nearby groundwater wells during site characterization efforts. The adjacent lots containing the wells have established GHU water connections and utilize this service. Inspections and interviews indicated that the users of these properties do not rely on the wells for drinking water.

The nearest well is the Club Soda well located at the edge of the West Ditch south of the buildings and approximately 50 feet south of MW1. The uncapped six inch diameter well has wires and copper lines running near the casing. This well is no longer functional, although it has not been properly decommissioned. The property owner indicated the well is to remain in its current condition and unused. Two separate attempts to sample groundwater within the well were unsuccessful due to an obstruction approximately 10 feet below the top of casing.

The second well is located on the parcel two lots west of the NAPA property. Field observations indicated the well is currently connected to the building and could be operational, but is switched off. A sample (HW) was collected from this well and submitted for laboratory analysis.

As discussed in previous sections, the regional groundwater flow is generally northwest from the Tanana River towards the Chena River. Based on this regional flow, neither of these nearby wells is considered down-gradient from the Site.

5.0 LABORATORY RESULTS

Tables 1 – 5 in Appendix 2 present summarizes of the results of 216 soil and water samples that were collected across the Site during the site characterization effort. These tables do not include samples that were collected to solely to characterize wastes for disposal. Soil boring results collected during previous events are included in this document to provide a complete data set for the building perimeter. Summary tables of the soil boring results are located in Appendix 2. Complete copies of original laboratory reports are in Appendix 7. ADEC Laboratory Data Review Checklists (LDRCs) for the lab reports are in Appendix 8. The table below lists the specific areas of concern at the site and identifies the figures that show sample locations (Appendix 1) and results summary tables (Appendix 2) for each area of concern. Data quality control is discussed for the entire data set in the following section. This discussion is based on the contaminants of concern and the associated analytical method.

5.1 Results Location Summary

SAMPLING LOCATION	APPENDIX 1	APPENDIX 2
Perimeter Ditches	Figure Series D	Table 1
Former Waste Storage Areas	Figure Series S	Table 1
Driveways	Figure Series R	Table 1
Building Perimeter & West Ditch	Figure Series B	Tables 2 & 3
Groundwater	Figures Series D & B	Table 4
Soil Borings	Figures Series D, B & R	Table 5

5.2 Quality Control Summary

Data Quality Objectives

Data quality objectives for the project were to meet the requirements of the CA Plan and approved Amendments, which were generally in agreement with the FSG. The goal of the project was to produce data of adequate quality for comparison to 18 AAC 75 cleanup levels. The primary tool used to assess the quality of the data was the ADEC LDRC. A LDRC was completed for each individual laboratory work order and is included in Appendix 8.

Chemical Data Quality Assessment

A total of 216 samples were collected during this site characterization effort. Approximately 15% of the data was qualified as potentially biased by the laboratory due to low surrogate or laboratory control sample recoveries (primarily VOCs and

SVOCs). The qualified data bias is the result of sample dilution and the data is considered usable. Some qualifications were made due to poor matrix spike/matrix spike duplicate (MS/MSD) or lab control spike/lab control spike duplicate (LCS/LCSD) precision or laboratory blank contamination. All qualified data is properly identified in the respective SGS case narrative.

The limit of quantitation (LOQ) for some compounds exceeded the Method 2 cleanup levels for some compounds in some samples, usually due to dilutions. In these cases, the laboratory has provided estimated results (J flagged data) and the detection limit (DL) for the full work order. The summary data tables use data in the following order of quality: detected results, J-flagged results, the LOQ (for non-detect results if below the ADEC cleanup level), and the DL. A J flagged concentration is considered usable for comparison to the cleanup levels and the DL is considered usable to confirm that an analyte is non-detect below the cleanup level.

A total of 23 soil field duplicate pairs and two (2) groundwater field duplicate pairs were collected to evaluate field and laboratory quality control during this effort. The primary method to evaluate this is the relative percent difference (RPD) between the results for each detected compound in the duplicate pair. Tables 6 – 9 summarize the field duplicate samples, laboratory results, and RPDs for each of the duplicate pairs. The duplicate pair RPDs are briefly discussed in the LDRCs for each lab report.

The preferred range for the RPD is +/-50% in soil samples and +/-30% in water samples. Most soil duplicate pairs were within this RPD range and the two groundwater duplicate pairs in Table 8-2 are with this RPD range. Contaminants in the duplicate pairs that exceeded the preferred RPD range are discussed below. The data is considered usable as described in this report.

Of the 14 duplicate pairs listed for the soil characterization in Table 6 (results in Table 1), only DP8, DP14, DP21, and DP22 had one or more analytes that exceeded this target. The natural heterogeneity of the gravel material and the contaminant distribution within the gravel are the most likely sources of the differences between the results for the duplicate samples. In each case, the results in both samples were below the cleanup level for that compound, indicating that the results were acceptable as used in the report. The two field duplicate pairs analyzed for metals were from this same group of samples (DP4 and DP12) and the RPDs were acceptable.

Five duplicate pairs in Table 7 (results in Table 2) generally more individual contaminants detected and contaminant concentrations were generally higher. In DP19, DRO and RRO were acceptable, while GRO was not and the detected VOC concentrations in sample BP-SC110 were significantly higher than the non-detect LOQs in sample BP-SC109. Due to these differences, Sample BP-SC110 should be used for regulatory compliance purposes at this location. Other contaminants with elevated RPDs had both results above or below the cleanup level and the results are considered adequate to confirm the results in these locations.

Four duplicate soil pairs were collected during the soil boring activities at the site and are summarized in Table 9 soil borings. DP2 RPDs ranged from 44.7% to 86% for petroleum fractions and VOCs, while the metals RPDs were less than 47%. The petroleum and VOC RPDs are adequate to confirm the COCs present at the site. The metals RPDs show more of the natural heterogeneity of the composition of the gravel, while the petroleum and VOCs include the additional heterogeneity of contaminant dispersion within the gravel in the secondary source soils.

GRO AK101

No soil or groundwater samples had GRO concentrations above the cleanup level and most were non-detect. GRO concentrations were usually only measurable in results having significant DRO contamination.

DRO AK 102

A total of 43 samples had DRO concentrations above the cleanup levels. The highest concentrations were found along the building perimeter (Figure Series B and Tables 2 and 3) or from soil borings in this same area. Several of these areas were subsequently excavated as discussed in other sections of this report.

A limited number of samples from soil remaining at excavation limits had DRO concentrations slightly above cleanup levels. Laboratory notes and/or discussions with laboratory personnel indicated that elevated RRO concentrations in these same samples were likely contributing to the reported DRO concentrations. This is supported by the observation that the facility did not have diesel fuel or heating oil for sale or on-premises heating and most of the petroleum at the site was present as lubrication oils.

Lighter weight and less viscous oils, commonly used in arctic applications, are expected to have a higher proportion of DRO range compounds than heavier lubrication oils that consist of primarily RRO range compounds. A review of the laboratory chromatographs (Appendix 6) shows the bulk of the petroleum contaminants in these samples are in the RRO range. More importantly, the chromatographs and laboratory data indicate that the DRO/RRO ratio is relatively consistent across the site. This indicates that the bulk of the petroleum mass across the site is in the RRO range, even though a greater number of samples exceed the DRO cleanup level. Further evaluation of the risk associated with the specific DRO contaminants observed at the site is recommended.

RRO AK103

A total of 19 samples exceeded the ADEC cleanup level for RRO. Each of these also exceeded the ADEC cleanup level for DRO and the DRO/RRO ratio was consistent as discussed above. Due to the higher cleanup level for RRO than DRO, the RRO concentration was also proportionally less than the DRO concentration compared to its cleanup level. This indicates that the DRO concentrations are a higher percentage above the cleanup level, although more of the contaminant mass is in the RRO range.

Volatile Organic Compounds (VOCs) SW 8260

Two hundred thirteen (213) samples were analyzed for VOCs. A total of 22 different VOC compounds were detected in one or more samples, although most samples only had a few compounds detected. PCE exceeded the cleanup level in 41 samples, while benzene exceeded the cleanup level in six (6) samples. Trichloroethene and ethylbenzene exceeded their ADEC cleanup levels in a few samples that were contaminated with PCE and benzene, respectively.

Several data quality deficiencies were found in the review of the VOC analysis. The most significant was that methylene chloride was detected above the ADEC cleanup level in two groundwater samples, but was not detected in the previous water samples or any of the soil samples. Methylene chloride is a common laboratory solvent and can contaminate environmental samples during handling at the laboratory. Due to the low cleanup level and elevated laboratory limits, the LOQs for methylene chloride were often above cleanup levels. This resulted in review of the laboratory detection limit (DL) and review of the results for estimated values below the LOQ but above the DL. The DLs were below the cleanup levels and estimated concentrations were not reported above the DL. The data suggest that the methylene chloride was not prevalent at the NAPA site and that the two samples reported above the cleanup levels may have been a laboratory artifact.

A limited number of samples were qualified due to low surrogate recoveries and/or low laboratory control sample recoveries. Some non-detect results had LOQs at or slightly above cleanup levels and detection limits (DLs) below cleanup levels. Surrounding samples within the same matrix were non-detect with LOQs below cleanup levels or the analytes were not Site COCs. Of qualified results, most were biased high and the compound was below the ADEC cleanup level. Data were considered acceptable when the compound was not present. In samples with a low bias, the bias percentage was not adequate to bring the non-detect results within an order of magnitude of the cleanup level. All data is considered usable as described in this report.

Semi-Volatile Organic Compounds (SVOCs) SW 8270

Thirty-seven (37) samples were analyzed for SVOCs. Only one SVOC, phenol, was detected in three (3) of the samples. The remaining SVOCs were not detected in any sample. Several data quality deficiencies were found. Most qualifications were due to low laboratory control sample recoveries and/or surrogate recoveries. Some data was qualified due to MS/MSD or LCS/LCSD accuracy. None of these issues would have resulted in the failure to identify a SVOC compound above its cleanup level and all SW8270 data was usable for establishing which compounds met the ADEC cleanup levels.

Glycols SW 8015B

Two hundred fourteen samples were submitted to SGS for glycol analysis, which subcontracted the analyses to EPA certified Bio-Chem Laboratory Inc. Two soil samples and one groundwater samples exceeded cleanup levels for ethylene glycol. All other results were below cleanup levels or non-detect. No data quality deficiencies were noted.

TAL 23 Metals SW6020/SW7470

Four (4) soil samples, consisting of two (2) duplicate pairs, and one (1) water sample from the off-site drinking water well were analyzed for TAL 23 metals (SW 6020 and SW 7470 for mercury) as part of the September/October characterization. Nine (9) samples were collected from the original borings. No qualified or rejected data was noted for these metals analyses. Metals concentrations were at or below ADEC cleanup levels and Fairbanks background concentrations.

Overall, the data quality for the NAPA Van Horn property is sufficient to fulfill project objectives. A detailed assessment of data quality is provided in the LDRCs (Appendix 8) and in the SGS Laboratory Case Narratives (Appendix 7).

6.0 ANALYSIS

NORTECH has completed site characterization at the NAPA facility located at 1937 Van Horn Road in Fairbanks, Alaska. The facility was partially destroyed by fire on May 26, 2011 and firefighting water spread petroleum contamination across the property and onto adjacent properties. Interim characterization and emergency corrective action occurred in May and June 2011 and are discussed in the planning documents for this site characterization. Specific objectives of this effort were to identify COCs, determine the horizontal and vertical extents of soil contamination, and evaluate the potential for groundwater contamination. Field screening data was used to guide site cleanup and excavation and additional field screening and laboratory results were collected to document conditions at excavation limits. ***NORTECH*** also facilitated free product recovery, waste management, and disposal oversight.

The site cleanup and characterization effort was completed in September and October 2011 following approval of the work plan by ADEC. A 12.5-foot by 12.5-foot grid was laid out across more than an acre of suspect area to provide a uniform basis for sampling. Over 1400 field screening samples were collected from perimeter ditches, waste stockpile areas, and driveways. More than 140 additional field screening samples were collected from 22 soil borings advanced by mechanical direct push drilling and manual soil-auguring. Laboratory samples were collected at the highest field screening locations as outlined in the plan, resulting in the collection of one hundred sixty-five (165) soil samples for laboratory analysis. Fifteen (15) groundwater samples were collected from temporary sampling points and two-inch monitoring wells.

The figures in Appendix 1 contain final field screening results and laboratory sample locations for each area investigated. Appendix 2 contains laboratory data summary tables. This section discusses the results of the characterization effort by location at the site.

6.1 Perimeter Ditches

The field screening results and laboratory sample locations for the perimeter ditches are shown in the "D" series of figures in Appendix 1. Laboratory results are summarized at the top of Table 1 in Appendix 2. The nine (9) ditches located around the north, east, and south of the Site perimeter are shown in Figure D1. These ditches represent the furthest extent of potential contaminant migration from the building as firefighting water flowed across the ground surface and pooled in these ditches. Culverts in the north ditches were plugged with sorbents and booms to prevent migration between ditches following the initial release.

6.1.1 Northwest Ditch

The Northwest Ditch (Figure D2) covers approximately 2,800 square feet and is located on the western adjacent property and the Van Horn Road ROW. The Northwest Ditch is connected to the North Ditch by a culvert under the access to the western adjacent property. Firefighting water reached this ditch through the culvert. Water in this ditch had a limited sheen during the initial response, but free phase contamination was not observed. Four to eight inches of soil were excavated with the roots of the vegetation after water removal. Approximately 75 CY of contaminated soil was removed during the initial response effort.

Forty-one (41) field screening samples were collected to characterize the remaining surface and results ranged from 0.0 ppm to 0.3 ppm. Soil samples from the three (3) highest field screening locations (NW-SC22, NW-SC23, and NW-SC24) had detected RRO concentrations below ADEC Cleanup Level Method 2. No other COCs were detected in these samples.

These three (3) locations were above underground utility lines and SB21 was advanced as close as safe to the NW-SC22 location. Field screening results ranged from 0.9 ppm to 2.4 ppm. Saturated soil was encountered at approximately eight (8) feet bgs and the boring ended at 12 feet bgs. Soil sample SB21-SC55 was submitted from the depth with the highest field screening (four feet bgs). DRO and RRO were detected below ADEC cleanup levels and no other COCs were detected. Water sample NW-TSP10 was collected from this boring with no COCs detected.
Field screening and laboratory sample results indicated surface and subsurface soils and groundwater at the Northwest Ditch meet ADEC cleanup levels. Based on field observations and laboratory analysis, no contamination remains in the Northwest Ditch. No further characterization or remedial action is necessary in the Northwest Ditch and cleanup is complete in this location. The Northwest Ditch should be returned to the original grade with material as identified in the ADOT&PF ROW specifications.

6.1.2 North Ditch

The North Ditch (Figure D2) covers approximately 7,000 square feet on the NAPA property and ADOT&PF ROW between the NAPA parking area and the paved surface of Van Horn Road. The North Ditch is connected to the Northwest Ditch and the Northeast Ditch by culverts beneath access driveways. Firefighting water reached this ditch through surface flow across the northern parking area and then flowed through the culverts to the other northern ditches.

A black oily product layer was observed on the surface of this ditch, but a mound of soil and tall grass near the western end of this ditch prevented migration of this oily material to the northwest ditch. The culverts were blocked and initial recovery of the oily layer was completed with a vacuum truck. Then the vacuum trucks were used to remove the remaining oily water, which was followed by manual removal of most oily vegetation. Contaminated soil and roots of vegetation were removed up to 12 inches below the original surface. Approximately 190 CY of contaminated soil was removed during the initial response effort.

Eighty (80) field screening samples were collected to characterize the surface and results ranged from 0.9 ppm to 5.6 ppm. Soil samples from the four highest field screening locations (N-SC18, N-SC19, N-SC20, and N-SC21) were collected. Surface soil sample N-SC21 had RRO concentrations below the cleanup level. No other COCs were detected in these samples.

SB19 was advanced at the highest field screening location (N-SC18), along the southern edge of the ditch, close to a utility pole. Field screening results ranged from 1.5 ppm to 2.2 ppm. Saturated soil was encountered approximately six (6) feet bgs and the boring ended at 12 feet bgs. Soil sample SB19-SC53 was submitted from the depth with the highest field screening (six feet bgs). No COCs were detected in this sample. Water sample N-TSP6 was collected and from this boring and no COCs were detected.

Fairbanks Pumping and Thawing completed culvert cleaning for both culverts associated with the North Ditch in October 2011. This generated a small amount of water which was disposed of on the contaminated soil stockpile. Visual and physical inspections indicated that no oily residue remained in the culverts. No laboratory testing was necessary to document the status of the culverts and the sorbent plugs were removed.

Field screening and laboratory sample results indicated surface and subsurface soils and groundwater at the North Ditch meet ADEC cleanup levels. Inspection of the culverts indicates that these structures are also clean. Based on field observations and laboratory analysis, no contamination remains in the North Ditch. No further characterization or remedial action is necessary in the North Ditch and cleanup is complete in this location. The North Ditch should be returned to the original grade with material as identified in the ADOT&PF ROW specifications.

6.1.3 Northeast Ditch

The Northeast Ditch (Figure D3) covers approximately 5,000 square feet on the eastern adjacent property and ADOT&PF ROW. The Northeast Ditch is connected to the North Ditch by a culvert beneath the NAPA access driveway. Most firefighting water in the Northeast Ditch came through the culvert from the North Ditch, but some may have flowed across the eastern driveway and then north along the East Ditch. The culvert was blocked and flow to the east was blocked by a mound in the ditch line that appears to be related to the GHU wastewater collection system. The original ground surface of the Northeast Ditch appeared to be lower than other ditches, which resulted in a greater water depth.

A thin layer of oily product was observed in this ditch and recovered with sorbents pads. The remaining oily water was then pumped using vacuum trucks and the oily vegetation was manually removed. A test hand excavation was done in this trench to identify the depth of the wastewater line along the northern portion of the property.

Once this depth was established, the contaminated soil and roots of vegetation were removed up to 12 inches below the original ground surface. A cleanout for the NAPA wastewater service line was broken and repaired during the excavation. Approximately 130 cubic yards of contaminated soil were removed.

Forty-seven (47) field screening samples were collected to characterize the surface and results ranged from 1.2 ppm to 4.7 ppm. Soil samples from the three highest field screening locations (NE-SC13, NE-SC14, and NE-SC15) were collected. One sample had DRO detected below the cleanup level and each of the three samples had RRO detected below the cleanup level. No other COCs were detected.

SB20 was advanced at the highest field screening location in the Northeast Ditch (NE-SC15), adjacent to the north access driveway. Subsurface field screened samples were collected to 16 feet bgs. Field screening results ranged from 1.6 ppm to 2.1 ppm and sample SB20-SC54 was collected at the highest location (2.5 feet bgs). No contaminants of concern were detected in this soil sample. Saturated soil was encountered at approximately four feet bgs and extended to the bottom of the boring. Water sample NE-TSP7 was collected at four feet bgs and no contaminants of concern were detected.

Field screening and laboratory sample results indicated surface and subsurface soils and groundwater at the Northeast Ditch meet ADEC cleanup levels. Based on field observations and laboratory analysis, no contamination remains in the Northeast Ditch. No further characterization or remedial action is necessary in the Northeast Ditch and cleanup is complete in this location. Several feet of gravel were placed in the Northeast Ditch in September 2012 to provide insulation for the NAPA wastewater service line. This brought the ditch back to the original grade and the final surface should be finished as identified in the ADOT&PF ROW specifications.

6.1.4 East-Northern Ditch

The driveway on the east side of the building extended very close to the property line with the east adjacent property. Most firefighting water appeared to drain to the north and south out of the building, but some drained east across the driveway and reached the property to the east. The eastern adjacent property did not have a defined ditch like the other sides of the Site, but two distinct areas of shallow ponded water were present. This section discusses the East-Northern Ditch, which is the northern portion of this eastern area. The next section (6.1.5) discusses the East-Southern Ditch, which is the southern portion of this eastern area.

The East-Northern Ditch (Figure D3) covers approximately 4,500 square feet and is located on the east adjacent property. The East-Northern Ditch is located south of the Northeast Ditch but was connected by culvert or direct drainage at the time of the fire. Standing water was only a few inches deep and most oil appeared to have been captured by vegetation near the location that water entered this area. Excavation of the vegetation and roots reached up to 12 inches below grade, where the silty soil was frozen. A light sheen was occasionally observed as soils thawed and seasonal rain filled footprints and other small puddles. This sheen cracked upon contact, consistent with biogenic sheen and not indicative of petroleum contamination. Regular inspection continued during rain events until characterization was completed with no contamination or significant ponding identified.

Forty-nine (49) field screening samples were collected with results ranging from 1.2 ppm to 2.1 ppm. Three laboratory samples (EN-SC10, EN-SC11, and EN-SC12) were collected from the three highest locations. RRO concentrations were below the cleanup level. DRO was present in sample EN-SC11 below the cleanup level. No other COCs were detected at or above laboratory LOQs.

No soil borings were advanced in the East-Northern Ditch, as the soils were excavated to the top of the seasonal frost during initial corrective activities. No evidence of contamination was observed to suggest that the contaminants from the firefighting water penetrated deeper than the top of the seasonal frost. Additionally, the East-Northern Ditch was excavated to the edge of the Northeast Ditch and these two ditches were observed to have similar native materials. The samples collected from the Northeast Ditch subsurface and groundwater samples are considered reasonably representative of the East-Northern Ditch.

Field screening and laboratory sample results indicated surface soils at the East-Northern Ditch meet ADEC cleanup levels. Based on these results and the results from the Northeast Ditch, the East-Northern Ditch meets the ADEC Cleanup Levels. No further remedial action is necessary and this area should be considered closed. This area should be backfilled to the original grade.

6.1.5 East-Southern Ditch

The East-Southern Ditch (Figure D4) covers approximately 3,000 square feet on the adjacent east property. The East Southern ditch is separated from the East-Northern Ditch by a slight rise and from the Southeast Ditch by elevated area that appeared to be a driveway for some previous activity on the eastern property. The East-Southern Ditch is not connected to other ditches by culverts or direct drainage. Very little standing water was observed in this ditch during the inspections and no free product or liquid water was recovered. The area was delineated based on the appearance of wet/oily vegetation. Excavation of the vegetation and roots reached up to 12 inches below grade, where the silty soil was frozen.

Thirty-five (35) field screening samples were collected with results ranging from 1.1 ppm to 3.7 ppm. Two (2) laboratory samples (ES-SC08 and ES-SC09) were collected from the highest field screening locations. RRO was detected at concentrations below the cleanup level in both samples, while DRO was detected below the cleanup level in sample ES-SC08. No other COCs were detected at or above laboratory LOQs.

No soil borings were advanced in the East-Southern Ditch, as the soils were excavated to the top of the seasonal frost during initial corrective activities. No evidence of contamination was observed to suggest that the contaminants from the firefighting water penetrated deeper than the top of the seasonal frost. Additionally, the East-Southern Ditch would have connected to the Southeast Ditch had the driveway not been in place. Field observations indicate that the East-Southern Ditch is substantially similar to the Southeast Ditch, so subsurface and groundwater samples collected from the Southeast Ditch are considered reasonably representative of the East-Southern Ditch.

Field screening and laboratory sample results indicated surface soils at the East-Southern Ditch meet ADEC cleanup levels. Based on these results and the results from the Southeast Ditch, the East-Southern Ditch meets the ADEC Cleanup Levels. No further remedial action is necessary and should be considered closed. This area should be backfilled to the original grade.

6.1.6 Southeast Ditch

The Southeast Ditch (Figure D4) covers approximately 10,500 square feet on the east adjacent property. The impacted area of the Southern Ditch extended from the NAPA property line most of the way across the southern portion of the adjacent lot and is also at least partially within the Sheldon Avenue ROW. The GHU water line is located beneath the southern edge of the Southeast Ditch. The Southeast Ditch is not connected to any other ditches by culverts or direct drainage and the oily water entered the Southeast Ditch from the southern driveway area.

Most of the free-phase liquid stayed near the NAPA driveway, where water was several feet deep. Migration of oil to the other portions of the Southeast Ditch was reduced by the presence of vegetation. Free-phase oil was initially recovered from the driveway using vacuum trucks with skimming attachments. Subsequently, the remaining oily water was also collected with the vacuum trucks. Observations of remaining vegetation were consistent with a bathtub-ring, suggesting that oily contamination floating above the water surface heavily impacted water level edges around the ditch more than the bottom of the ditch. Excavation of the vegetation and roots extended up to 12 inches deep. Approximately 300 CY of contaminated soil was removed from the Southeast Ditch.

A total of 123 field screen samples were collected with results ranging from 0.9 ppm to 6.8 ppm. Nine laboratory samples, including field duplicates, were collected at the highest field screening results. Each sample had RRO concentrations detected below the cleanup level. Six samples had DRO concentrations detected below the cleanup level. Other analytes were not detected above laboratory quantitation limits.

Soil borings SB15 and SB16 were advanced in the Southeast Ditch at the highest field screening locations from each ditch end. Soil boring field screening results ranged from 1.4 ppm to 3.3 ppm and one sample was submitted from each boring (SB15-SC48 at 0-2' bgs and SB16-SC49 16-18' bgs) for laboratory analysis. SB15-SC48 had DRO and RRO concentrations below the cleanup levels. No other contaminants were detected in SP15-SC48 and no COCs were detected in SP16-SC49. One temporary sampling point was advanced in the Southeast Ditch (SE-TSP3) to a depth of (8) feet bgs at the location of SB16. No COCs were detected above the laboratory limits of quantitation in this sample.

Field screening and laboratory sample results indicate surface soil, subsurface soil, and groundwater below the Southeast Ditch meet ADEC Cleanup Levels. No further remedial action is necessary and the Southeast Ditch should be considered closed. This area should be backfilled to the original grade.

6.1.7 South Ditch

The South Ditch (Figure D5) covers approximately 5,500 square feet on the southern extent of NAPA property. Most of the impacted area is believed to be on the NAPA lot, but some is within the Sheldon Drive ROW. The GHU water line runs beneath the southern edge of the South Ditch. The South Ditch is not connected to any other ditches by culverts or direct drainage. Oily water flowed over the southern portion of the building, across the southern parking area and a grassy undeveloped area into the South Ditch. The deepest portion of the South Ditch was adjacent to the south driveway, and the water depth decreased to the west.

Initial efforts in the South Ditch were focused on the removal of free-phase oil from the water surface near the south driveway using vacuum trucks. The remaining water was collected after most oil was removed. Observations of remaining vegetation were consistent with a bathtub-ring, suggesting that oil contamination floating above the water surface heavily impacted water level edges around the ditch more than the bottom of the ditch. Excavation of the vegetation and roots extended up to 12 inches deep. Approximately 150 CY of contaminated soil was removed from the South Ditch.

Fifty (50) field screening samples were collected with results ranging from 2.5 ppm to 5.5 ppm, below background levels. Four (4) laboratory samples (S-SC25, S-SC26, S-SC27 and S-SC28) were collected from the highest field screening locations, including a field duplicate. RRO was detected below the cleanup level in each sample, while DRO was detected below the cleanup level in three of the samples. No other COCs were detected.

Soil boring SB17 was advanced to a depth of 20 feet bgs in the South Ditch at the highest field screening location. Field screening results ranged from 1.4 ppm to 2.9 ppm. Duplicate soil samples SB17-SC50 and SB17-SC51 were collected from the first two feet. DRO and RRO were detected below cleanup levels, while no other COCs were detected. Groundwater sample S-TSP4 was collected from a temporary sampling point at five feet bgs and results for each of the COCs were below laboratory LOQs.

Field screening and laboratory sample results indicate surface soil, subsurface soil, and groundwater below the South Ditch meet ADEC Cleanup Levels. No further remedial action is necessary and the Southeast Ditch should be considered closed. This area should be backfilled to the original grade.

6.1.8 Southwest Ditch

The Southwest Ditch (Figure D5) covers approximately 900 square feet on the southwestern portion of NAPA property. This area is north of Sheldon Drive and very close to the western property line, but east of the West Southern Ditch. This low-lying area is not connected to any other ditches by culverts or direct drainage. Standing water was observed in the Southwest Ditch immediately after the fire, but no evidence of firefighting water, petroleum sheening, or oily liquids was observed. The Southwest Ditch was not pumped or excavated because no evidence of environmental concerns were observed, and the water evaporated during summer.

Field screening was undertaken to identify potential contamination due to proximity to other ditches. Seventeen (17) field screening samples were collected with results ranging from 0.8 ppm to 2.5 ppm. Two (2) laboratory samples SW-SC29 and SW-SC30 were collected from the highest field screening locations. RRO was detected in both samples below the cleanup level. No other COCs were above the laboratory LOQs.

Since no evidence of contamination was observed during initial cleanup work or the follow-up characterization inspections, no soil boring or TSP was advanced in the Southwest Ditch. Field screening and laboratory sample results confirm the Southwest Ditch was not impacted by firefighting water and the soil meets the ADEC Cleanup Levels. No further remedial action is necessary and the Southwest Ditch should be considered closed.

6.1.9 West-Southern Ditch

The West-Southern Ditch (Figure D5) covers approximately 2,200 square feet southwest of the NAPA building. This area is oriented in a north-south direction along the edge of the southern driveway to the parcel on the west. The West-Southern Ditch straddles the western boundary, with portions on both the NAPA property and the adjacent western parcel. This ditch is the poorly defined southern extent of the West Ditch, which is located between the NAPA and Club Soda buildings. Field observations indicated that oily firefighting water filled the West Ditch and some of this oily water flowed to the south along the side of the driveway. Contamination was limited to a stained area with a few shallow puddles during the initial inspection. Sorbents were used to mop up this limited amount of liquid and up to 12 inches of impacted soil were removed with the vegetation.

Thirty-one (31) field screening samples were collected and results ranted from 0.9 ppm to 2.5 ppm. Identified and suspected underground utilities limited soil borings in the southern portion of this area, so soil boring SB22 was advanced to 12 feet bgs at the highest field screening results in the central portion of this area. Soil boring PID results ranged from 1.6 ppm to 2.6 ppm and laboratory sample SB22-SC56 was collected from four feet bgs. RRO results were below the cleanup level and no other COCs were detected. A TSP was advanced at SB22 and groundwater sample duplicate pair W-TSP8 and W-TSP9 were collected from four feet bgs for laboratory analysis. No COCs were found above laboratory LOQs.

Field screening and laboratory sample results indicate surface soil, subsurface soil, and groundwater below the West-Southern Ditch meet ADEC Cleanup Levels. No further remedial action is necessary and the West-Southern Ditch should be considered closed. This area should be backfilled to the original grade.

6.2 Former Waste Storage Areas and Corrective Actions

Wastes were containerized and stored at eight (8) locations on the southern and eastern portions of the Site and separated by origin and expected disposal methodology. Soil scraped from south of the building was stockpiled south of the building, south and west of gravel parking/driveways. Excavated soil from the perimeter ditches was stockpiled in the east driveway. Building wastes were stored in supersacks and drums on the concrete foundation and on gravel driveway/parking areas.

Soil stockpile locations were generally cleaned prior to initial stockpile construction in June 2011, while containerized waste storage areas were generally located in areas that had the least amount visible contamination at the time the storage area was needed. Waste removal was completed by September 2011. Additional characterization and corrective action, as necessary, was completed beneath storage areas following removal of the wastes from the Site in September and October 2011.

Nine (9) individual locations that required additional corrective action were identified beneath the former waste storage areas. Corrective action in these areas was categorized as either surface stains (less than 12 inches bgs) or pits (greater than 12 inches bgs). The total quantity of contaminated soil from these corrective actions was approximately 30 CY of contaminated soil.

The waste storage areas are shown in the “S” series of figures in Appendix 1. Figure S1 shows the storage areas, while S2 and S3 show the field screening and laboratory results from the surfaces beneath these waste storage areas. These figures also show the locations of surface scraping and pits that were excavated during additional corrective action. The field screening and laboratory sampling of individual surface scrapes and closures are detailed in Figures S4-S7. Laboratory results are summarized in the middle of Table 1 in Appendix 2.

6.2.1 Eastern Stockpile

The eastern stockpile (SP1) contained about 1,100 CY of contaminated soil that was excavated from perimeter ditches. The RAP was removed from this area and a liner was installed. A visual inspection was completed, but no soil screening or laboratory samples were collected between prior to construction of SP1. No evidence of contamination was observed during a visual inspection after SP1 was removed.

Forty (40) field screening samples were collected with results between 0.3 ppm and 4.0 ppm. Three soil samples (SP1-SC31, and field duplicate pair SP1-SC32 and SP1-SC33, were submitted for laboratory analysis from the highest field screening locations. Preliminary analytical results indicated that DRO at sample location SP1-SC31 (286 mg/kg) exceeded the cleanup level (250 mg/kg), while other COCs met the cleanup levels. An additional 0.25 CY of oil was excavated from the SC31 location and field screening results were 2.2 ppm. Soil sample SP1-SC116 was collected after this limited excavation and met the cleanup levels for each COC. Based on the field observations and laboratory analysis, no further remedial action is necessary and the eastern stockpile area should be considered closed.

6.2.2 Southeastern Tanks and Lined Storage Area

The area south of SP1 on the eastern edge of the driveway was used to store trailer tanks, skid-mounted tanks, and a variety of drums and supersacks that were generated during hazardous waste removal from the structure. Stored materials included ditch water, floor sludge, suspected lead contaminated RAP, containers of sorbents and used PPE, and other contaminated soil waste. This area was not assessed or cleaned prior to storage of materials and the lined portion of this storage area was constructed on top of visibly stained soil.

Each tank, drum, and supersack was inspected for potential leaks, spills, or damage prior to removal from the site and no concerns were noted. Following the removal of these items and the disassembly of the lined storage area, the ground surface was inspected and field screened. The visual inspection resulted in removal of approximately 5 CY of visibly stained soil from SS5 and Pit 7. Thirty (30) field screening results outside the SS5/Pit 7 locations ranged from 2.3 ppm to 4.7 ppm and four laboratory samples met the cleanup for each COC.

SS5 is along the eastern boundary of former storage area at the edge of the driveway pad. Thirteen (13) field screening samples at the limits of SS5 ranged from 2.8 ppm to 3.8 ppm and laboratory samples met the cleanup levels for each COC.

Pit 7 was located underneath the lined storage area. Nine (9) field screening samples were collected and results ranged from 3.4 ppm to 15.8 ppm. Laboratory samples were collected from the two highest locations. One sample met the cleanup levels for each COC, while the other sample exceeded the DRO cleanup level, but met the cleanup levels for each of the other COCs.

The DRO concentration was 1,180 mg/kg in sample Pit7-SC86 (above the cleanup level) while the RRO concentration was 2,640 mg/kg, about an magnitude below the cleanup level. Review of the DRO/RRO chromatograph and a graphical analysis of DRO/RRO ratios suggests that the contaminants in the DRO range consist of heavier weight petroleum fractions that would typically be seen in a mix of motor oils instead of in diesel fuel. Based on the chromatograph and graphical analysis of DRO/RRO ratios, no further remedial action is considered necessary and Pit 7 should be considered closed. In the event that this review is not sufficient to address the Pit 7 concerns, a site-specific risk evaluation or development of site-specific, risk-based alternative cleanup levels will demonstrate that this soil does not pose a risk to human health or the environment.

Based on field activities, observations, and laboratory analysis, no further remedial action is considered necessary for the southeastern tank and lined storage area. If further action is considered necessary due to elevated DRO concentrations at Pit 7, the existing results should be used as the basis for a site specific risk evaluation to identify the appropriate action.

6.2.3 Southern Stockpiles

Four stockpiles (SP2, SP3, SP4 and SP7) were located on the southern portion of the NAPA property as shown in Figure S1. Oily sludge and up to 12 inches of soil were removed during initial cleanup prior to construction of these stockpiles. Field screening results prior to the construction of the stockpiles is not shown in the figures, but results were less than 5 ppm. No laboratory samples were collected because the area was going to be field screened and sampled again following removal of the stockpiles. SP2, SP3 and SP4 contained scraped contaminated soil from driveways south of the building. SP4 also held three fire-damaged vehicles and a forklift that were removed from the interior of the building. SP7 contained building metal, signage, and other smoke damaged items, but did not contain contaminated soil or liquid wastes.

SP2

Following SP2 removal, 25 field screening samples were collected and results ranged from 2.3 ppm to 7.4 ppm. Laboratory results from the two highest field screening locations had RRO concentrations below the cleanup levels. Other COCs were not detected. The soils beneath former SP2 meet ADEC cleanup levels and no further action is considered necessary.

SP3

Following SP3 removal, 22 field screening were collected and results ranged from 1.8 ppm to 15.3 ppm. Four laboratory samples (including one field duplicate pair) were collected from the highest field screening results. The three (3) samples shown in Figure S2 met the cleanup levels for each COC, while the DRO concentration at one location (SP3-SC40, not shown at Pit 8 location) was approximately two times the cleanup level.

Pit 8 was excavated to remove the remaining contaminated soil at SP3-SC40 and field screening results and laboratory locations at the limits of Pit 8 are shown in Figure S6. The field screening results at the limits of Pit 8 ranged from 3.6 ppm to 8.1 ppm and six (6) laboratory samples, including one field duplicate pair, were collected. Results for five (5) of the six (6) samples met the cleanup level, while the DRO concentration for sample Pit 8-SC90 was 274 mg/kg, just above the 250 mg/kg cleanup level.

The RRO concentration in Pit 8-SC90 was well below the cleanup level. Review of the DRO/RRO chromatographs for samples in this area confirms that the DRO/RRO ratio is consistent with other locations across the site and the bulk of the contaminant mass is in the RRO range as discussed in Section 5.2. Based on these results, no further action is recommended at SP3 or Pit 8. In the event that this review is not sufficient to address the Pit 8 concerns, a site-specific risk evaluation or development of site-specific, risk-based alternative cleanup levels will demonstrate that this soil does not pose a risk to human health or the environment.

SP4

After removal of vehicles and SP4 soil, a new stockpile for demolished RAP and contaminated soil from the West Ditch and other corrective action was built on the southern portion of the SP4 footprint and south of SP2. A visual inspection did not identify any concerns or liner penetrations related to SP4. Field screening samples from the northern portion of SP4 ranged from 3.3 ppm to 4.6 ppm. No laboratory samples were considered necessary. Inspection and characterization of the remaining SP4 area is recommended for Spring 2013 following removal of the final stockpiles.

SP7

The inspection following removal of SP7 identified contaminated areas SS1 and SS2. These locations were each less than 25 square feet and less than 12 inches deep. Approximately 0.5 CY of contaminated soil was removed from each location. Field screening results under SP7 ranged from 2.1 ppm to 3.8 ppm and two laboratory samples were collected. Field screening results from SS1 and SS2 ranged from 2.4 ppm to 3.6 ppm and one laboratory sample was collected from the highest field screening result in each area. Laboratory results from the SP7, SS1, and SS2 samples were below the cleanup levels. No further remedial action is recommended for this area.

6.2.4 Southern Supersack Storage Area

The Southern Supersack Storage Area was located in the driveway a short distance south of the building. Initial corrective action in this area consisted of removing up to six inches of oily sludge and stained surface material. Field screening and laboratory testing was not completed and the storage area liner was installed over stained soil. The storage area was used as secondary containment for wastes collected from the interior building. These wastes were in 5Y bags, one cubic yard supersacks, and 275 gallon totes (intermediate bulk containers or ICBs). The stored containers were covered and water collected on the cover was inspected for potential contamination prior to disposal.

The inspection following removal of the materials and the liner identified contamination at the location of Pits 3, 4, 5 and 6. Approximately 15 CY of contaminated soil was removed from these visibly stained areas. A total of 36 field screening samples and 10 laboratory samples were collected at the limits of these four pits. Field screening results ranged from 0.2 ppm to 6.5 ppm. Laboratory results from these 10 samples met the cleanup levels for each COC.

Following the inspection and excavation of the pits, the remaining ground surface beneath the storage area was characterized. Fourteen (14) field screening samples were collected and results ranged from 1.9 ppm to 6.3 ppm. Two (2) laboratory samples were collected and met the cleanup levels except for DRO in sample 5Y-SC46 at 379 mg/kg.

Approximately one cubic yard of additional soil was removed from the 5Y-SC46 location and field duplicate pair 5Y-SC108 and 5Y-SC109 was collected for laboratory analysis. The laboratory results met the cleanup levels for all COCs, except for DRO in sample 5Y-SC109 at 302 mg/kg. The DRO concentration in the field duplicate (5Y-SC108 was 199 mg/kg.

These field duplicate results indicate the DRO concentration at this location is very close to the cleanup level. The results are within the acceptable error range for DRO in soil and represent the natural heterogeneity inherent in sampling a gravel soil matrix. Chromatograph review and DRO/RRO ratios suggest the bulk of the contaminant mass at this location is RRO as discussed in Section 5.2. No additional characterization or remediation is considered necessary at this location.

Based on the observations, field screening results, and laboratory data, no further action is recommended beneath the southern supersack storage area in general and the 5Y-SC109 location in particular. In the event that the existing results are not sufficient to address the 5Y-SC109 concern, a site-specific risk evaluation or development of site-specific, risk-based alternative cleanup levels will demonstrate that this soil does not pose a risk to human health or the environment.

6.2.5 Interior Supersacks

One-yard supersacks and 55-gallon drums were temporarily stored on the concrete pad in the northern retail portion of the former NAPA facility. Inspection of the concrete floor prior to storage of these containers indicated that an ashy/charcoal residue, but no standing liquids or oily sludge, was present. A visual inspection following removal of the supersacks confirmed that none of the containers released waste to the concrete pad surface. Emerald successfully cleaned the entire concrete pad surface, including this area, at completion of the waste removal activities. Based on the observations during cleaning, no further action is necessary and the interior supersack area should be considered closed.

6.3 Driveway Areas

The driveway areas consisted of RAP or compacted gravel surfacing and provided access from both Van Horn Road and Sheldon Avenue. RAP was present in the northern driveway, northern and eastern driveway/parking, and a limited area along the southern side of the building. The southern storage and driveway areas were compacted gravel. These surfaces covered the entire NAPA parcel except for the perimeter ditches and approximately the southwestern 20% of the lot. The driveway areas discussed in this characterization effort are the portions of the lot that were maintained for access to the building and waste storage areas.

The driveway areas are presented in the “R” series of figures in Appendix 1. Figure R1 shows the driveway areas, while R2 – R6 show the field screening and laboratory results from the surfaces/perimeters of these areas. These figures also show the locations of surface scraping and pits that were excavated during additional corrective action. The field screening and laboratory sampling of individual surface scrapes is detailed in Figures R5 and R6. Laboratory results are summarized near the end of Table 1 in Appendix 2.

6.3.1 North Driveway

In the North Driveway, the integrity of the RAP appeared adequate to prevent infiltration through the interior of the RAP surface and site characterization focused on the perimeter of the remaining RAP surface. Field screening samples were collected six and 12 inches below the RAP at 10-foot intervals along the perimeter of the North Driveway RAP. Soil boring B14 was advanced in the interior of the RAP. The RAP perimeter adjacent to the concrete pad of the building (the northern edge of the building) is discussed as part of the Building Perimeter in Section 6.4.

Field observations did not identify any potential concerns and field screening results at the RAP perimeter (away from the building) ranged from 2.5 ppm to 6.3 ppm and seven laboratory samples were collected. RRO was detected in five samples and DRO in two samples below cleanup levels. Other COCs were not detected.

B14 was advanced through the interior of the RAP surface at a spot that appeared thin during the initial soil boring work in June 2011. Four inches of RAP were present and underlain by five feet of structural gravel fill. Native silty sand was encountered below that and appeared to be frozen. Soils were saturated at 12 feet below the top of the concrete pad and stopped at 13 feet. No evidence of contamination was observed and field screening results ranged from 4.1 ppm to 7.1 ppm. The highest field screening result was observed beneath the RAP and a laboratory sample from that depth identified no COCs above the LOQ (Table 5).

Field screening and laboratory results indicate contamination did not accumulate at the edge of the RAP or penetrate the RAP in the North Driveway area. No further characterization or remediation is considered necessary in the North Driveway area.

6.3.2 East Driveway

The East Driveway area extended along the eastern edge of the building, from the north edge of the building to approximately 30 feet south of the building. This area was used by almost all traffic at the site during and after firefighting efforts. The RAP in this area was initially damaged by water erosion during firefighting. Additionally damaged occurred from use by heavy equipment traffic during cleanup activities. After inspecting the RAP and discussing the future traffic expectations for this area, the RAP surfacing was removed and stockpiled on site for recycling. The stockpile was constructed on the southern stockpile area, on the southern footprints of the removed SP2 and SP4 stockpiles. The RAP is expected to be recycled into new RAP by one of the local paving and RAP contractors.

Observations during RAP removal indicated the damaged RAP surface remained impervious with clean and dry gravel observed beneath the RAP. Fifty-four (54) field screening samples were collected at the gravel surface and results ranged from 1.9 ppm to 6.6 ppm. Laboratory samples were not collected due to heavy use of the area for building demolition, waste management/removal, and penetration of seasonal frost during characterization work in October 2011. New RAP was installed on the surface during the construction of the new building in 2012.

Boring SB18 was advanced approximately 20 feet east of the eastern overhead shop door as part of this site characterization effort. Although not the highest field screening location, this area was expected to have the highest likelihood for contamination due to firefighting water flow out the overhead door and heavy vehicle traffic during cleanup activities. The soil boring was advanced to a depth of 20 feet below the surface of the concrete pad with field screening results ranging from 1.3 ppm to 1.8 ppm. Several feet of structural gravel fill was observed above the native silty sand, similar to the North Driveway. Sample SB18-SC52, collected from 12-14 feet below the top of the concrete slab, was non-detect for all COCs (results summary on Page 2 of Table 5). Groundwater sample TSP5 was collected at the top of the saturated zone, approximately nine feet below the top of the concrete slab, and no COCs were detected.

Field observations of construction methods, fill depths, underlying native soils, and field screening results indicate that the East Driveway is substantially similar to the North Driveway. The East Driveway is also similar to the other surrounding waste storage areas. Based on similarities in materials and field screening results, the existing laboratory data from these adjacent areas is considered reasonable to confirm that the East Driveway area meets ADEC cleanup levels. No further characterization is considered necessary to evaluate this area. In addition, the soil surface that was characterized is now under a new impervious layer of RAP. In the event that area-specific laboratory samples are required, the existing field screening results should be used to identify the appropriate sample locations and any sampling should be limited to shallow cores through the new RAP.

6.3.3 South Driveway

The South Driveway area is defined as the access for the waste storage areas on the southern side of the building. The area extended from the southern driveway access (between the South Ditch and the Southeast Ditch) to the supersack storage areas. The South Driveway area also extended west between the southern stockpiles and the supersack storage area. The area was mostly packed gravel and any RAP that may have been present was removed during initial cleanup activities.

Several lightly stained areas were observed during the initial inspection of the South Driveway area. These were identified as Pit 1 and Pit 2, and surface stains SS3, SS4 and SS6 and are discussed in more detail below. Outside of these areas, 50 field screening samples were collected and results ranged from 2.1 ppm to 6.6 ppm. Three (3) laboratory samples, including a field duplicate pair, were collected. RRO was detected in the three samples and DRO was detected in one sample, with all concentrations below the cleanup levels. No other COCs were detected.

Pit 1 was located near SP7. Approximately three CY of contaminated soils were excavated from Pit 1. Eleven (11) field screening samples at the limits of Pit 1 ranged from 0.7 ppm to 7.8 ppm and five laboratory samples, including a field duplicate pair, were collected. Laboratory results for the duplicate pair exceeded the DRO cleanup level, while other results met the cleanup levels. Approximately 0.5 CY of additional soil was removed from this location. Subsequent sampling at the new excavation limits met the cleanup levels for each COC. No further characterization or corrective action is considered necessary at Pit 1.

Pit 2 was located slightly south of Pit 1. Approximately two (2) CY of contaminated soils was excavated from Pit 2. Nine (9) field screening samples at the limits of Pit 2 ranged from 0.4 ppm to 10.5 ppm and three laboratory samples were collected. Each sample met the cleanup levels for each COC and no further action is considered necessary.

SS3, SS4, and SS6 were located along the southern access driveway. These were each characterized separately, but are discussed together since conditions were similar. Taken together, these areas covered approximately 800 square feet and up to six inches of surface soil were removed. This resulted in the collection of approximately 10 cubic yards of contaminated material. Twenty-six (26) field screening results ranged from 2.5 ppm to 5.2 ppm. As described in the plan, one (1) laboratory sample was collected from each surface area and each COC met the cleanup level. Based on these results, no further action is necessary to address these surface stains.

6.4 Building Perimeter and West Ditch

As indicated in other sections of this report, the fire occurred in the southern part of the building. Firefighting water flowed out of the building in every direction, carrying oil to the perimeter ditches. The carrying capacity of the water during peak flow appears to have diminished with distance from the building as more oily residue was observed between the building and southern ditches (farther away) than the northern ditches (closer).

The volume of water flowing out of the building decreased as the building drained, leaving an oily sludge and residue extending from the building towards the ditches. This occurred primarily on the south and west sides of the building adjacent to the petroleum and paint storage areas. The oily sludge and emulsified petroleum remaining continued to slowly drain from the building during the initial response period. Source reduction efforts focused on reducing the volume of free liquids remaining within the building using a vacuum truck and manual cleanup. Simultaneously, a spill containment boom was installed along the building foundation to prevent more free liquids from migrating outside the building.

As described in other sections, the native silty sand material was removed from the building footprint and surrounding area for the installation of a structural gravel pad. The gravel pad provided a stable base for the building, consisting of non-frost susceptible fill resistant to freeze thaw cycles, designed to be structurally stable and allow unimpeded drainage of water through the soil matrix.

The perimeter of the building was characterized with a greater data density than the ditches and driveways because the well-drained material of the gravel pad appeared to provide a direct conduit to the subsurface soils and groundwater. In addition, the corrective excavation around the building perimeter area was limited to a 1:1 slope to maintain the structural integrity of the remaining foundation elements. For the purposes of this assessment, the building perimeter encompasses the surface to approximately 15 feet away from the building and includes the whole West Ditch area.

The discussion of the Building Perimeter starts at the northwest corner of the building and progresses clockwise around the building. The portion of the West Ditch north of the building is discussed as part of the West Ditch. All depths referred to in the Building Perimeter and West Ditch are relative to the top of the concrete pad, not the ground surface. Since the ground surface was lower than the concrete pad at most locations, many samples that appear to be several feet deep may have been close to the original ground surface. This normalization was completed during data review and some field notes and interim documents may reference other elevations.

The Building Perimeter areas are shown in the "B" series of figures in Appendix 1. Figure B1 shows a plan view of the building and identifies the perimeter segments and soil profiles shown in B2 through B14. Figure B1 also shows the locations of soil borings and monitoring wells that were advanced in the Building Perimeter and West Ditch areas. The eight soil profile cross-sections clearly illustrate the existing data and conditions present beneath the structure.

Laboratory data related to the Building Perimeter can be found in each of the tables in Appendix 2. The bottom of Table 1 includes data from the West Ditch. Table 2 contains the data from samples collected specifically to characterize the gravel pad and Building Perimeter on the north, east, and south sides of the building. Table 3 includes results from four samples that were collected specifically to confirm that metals were not COCs from this release. Table 5 contains the results from soil borings across the site, including the first group of soil borings completed in June 2011 to characterize the potential for contaminants within the structural gravel pad. Groundwater results from these soil borings are discussed in Section 6.5, below.

6.4.1 Slab Interior and Floor Drains

The most significant potential for COCs to reach the structural gravel pad was directly through the concrete pad. During initial cleanup, the building plans were reviewed and two floor drains were noted in the southern portion of the building. One drain was in the boiler room. The second was in the garage bay to drain snow-melt from delivery vehicles that return to the facility for overnight parking.

These floor drains could not be evaluated directly during the initial cleanup due to debris in the building. The cleanout at the exterior of the building and the manhole were inspected multiple times during the initial cleanup activities. No visible or olfactory indications of contamination were observed at either the cleanout or manhole, suggesting the floor drains were plugged at the time of the fire, not allowing contamination into the drain system.

After removal of the oily sludge and other debris, the floor was inspected to identify cracks and other potential floor penetrations. No cracks or other concerns were observed. Neither floor drain would drain and both were found to be clogged at the trap beneath the slab. Each floor drain was cleaned and functioned properly after the cleaning. They were winterized to prevent freezing during the winter.

Based on field observations, the two floor drains are clear of obstructions. These drains were not damaged by the fire, and are not a source of contamination beneath the slab. A dye test could be done to confirm that the drains remain intact following construction of the new building, but is not considered necessary as part of the environmental portion of the cleanup. No additional soil investigation beneath the building slab is considered necessary as no other pathway for contaminant migration was identified.

6.4.2 North and Northeastern Portion of Building

This section discusses the northern portion of the building, starting at the northwest corner and extending to approximately halfway down the east side. As indicated previously, the portion of the West Ditch that is north of the building is discussed as part of the West Ditch in Section 4.4.5. The field screening locations and results, laboratory sample locations, and soil boring locations are shown in Figure B2. Soil boring results are summarized in Table 5.

Boring B13 was advanced at the northwest corner of the concrete apron, which extended approximately 10 feet north of the actual wall of the building and supported the front canopy of the building. Boring B13 extended 13 feet below the top of the concrete slab. Field screening results ranged from 5.1 ppm to 8.0 ppm in the dry structural gravel pad that was present to a depth of nine feet. Field screening results between nine (9) feet and 13 feet ranged from 20.1 ppm (moist zone) to 49.5 ppm (saturated zone). Samples collected at 9-10 feet and 11-13 feet had detectable concentrations of VOCs and ethylene glycol, but concentrations were below the cleanup levels for all COCs.

Boring B14 was advanced to saturated, sandy gravels at 13 feet below the top of slab at the center of the north side of the building. Field screening results ranged between 4.1 and 7.1 ppm and two laboratory samples were collected at the highest field screening results (2-4 feet and 9-11 feet). Ethylene glycol was the only COC detected (9-11 foot depth) and the concentration was below the cleanup level. These results confirmed that vertical migration of contamination did not occur along the northern edge of the building. Additionally, these results indicated that smear zone contamination from horizontal groundwater migration did not occur along the north perimeter of the building during firefighting activities.

With no large-scale contamination identified north of the building from the initial soil borings, the site characterization efforts focused on evaluating the potential for contamination of the structural gravel pad due to oily sludge running off the edge of the concrete pad. This was assessed in the fall 2011 through field screening along the northern building slab perimeter. Field screening samples were collected six and 12 inches below the slab at 10-foot intervals starting five feet from Boring B13. Field screening results (and depths) are shown in Figures B2, B4, B9, B11, and B13. One field screening result was elevated, 37.2 ppm at 12 inches below grade near the building perimeter's northeast corner. Observations indicated this was floor cleaning solution. All other field screening results in this area ranged between 2.7 to 9.7 ppm. Three laboratory samples, including one field duplicate pair, were collected. DRO and RRO laboratory results in the duplicate pair were below the cleanup level. Other COCs in these two samples and each COC in sample RP-SC57 were below detection limits.

Based on field screening and laboratory results from soil borings and surface soil samples, the north edge and northern half of the eastern edge of the Building Perimeter meet ADEC cleanup levels. Soil contamination is not present above the smear zone. Very low levels of contaminants in the smear zone near the northwest corner are related to migration in the smear zone and should be managed as part of that concern, if necessary in the future. No additional characterization or corrective action is considered necessary at the northern Building Perimeter.

6.4.3 Southeast Portion of Building

This section discusses the perimeter of the southeast building corner (Figure B5). This portion of the building starts on the eastern side a few feet north of the overhead door and extends around the southeast corner of the building to the western side of the southern overhead door. The interior of this portion of the building was used for storage of batteries, bulk petroleum products, and other automotive supplies. Firefighters cut the exterior walls for access on both sides of the corner and about halfway between the corner and the southern overhead door. Oily water is believed to have drained out the overhead doors, man doors, and firefighting access cuts during firefighting and continued to seep from these locations during initial cleanup work.

Initial activities in this area consisted of surface scraping of oily sludge and RAP near the southeast corner down to the top of the footing pads. Visibly stained gravels extended approximately five (5) feet outward from the concrete pad. Following completion of building waste removal, contamination was observed in the expansion joints between the slab and the concrete aprons in front of both overhead doors. These aprons were removed and 15 CY of additional contaminated soil was removed from these locations as well as other areas outside the structural prism of the foundation.

Results in this section are discussed in general from north to south and then east to west. Samples were collected from vertical soil borings adjacent to the building and aprons, the horizontal and vertical limits of excavations, and horizontal soil borings that were manually advanced beneath the building. Samples that exceeded ADEC cleanup levels and were excavated during subsequent corrective actions are listed in the tables, but are not shown on the figures.

Soil borings B6 and B7 were advanced along the south half of the eastern side of the building in June 2011. These results are summarized in Table 5. B7 was located north of the overhead door and field screening results ranged from 0.0 ppm to 14.7 ppm. Laboratory samples from the bottom of the structural gravel pad and top of the smear zone indicated that trace amounts of RRO, MEK, and both ethylene and propylene glycols were present. These observations and results indicate that oily contamination did not migrate vertically down from the surface to the smear zone in this area.

Boring B6 was located on the south side of the overhead door at the end of the apron. Surface RAP erosion and staining indicated that firefighting water and other oily sludge had migrated across this area. Sample B6 0-3 was collected from the shallow subsurface and verified COCs are present to approximately three feet below the top of the slab. The laboratory results indicated, DRO, RRO, benzene, PCE, and toluene exceeded the ADEC cleanup levels, while several other VOCs and ethylene glycol were detected below cleanup levels. This sample location was excavated during additional corrective action in October 2011 and is not shown in the figures.

Field screening results in Boring B6 were at background concentrations from four feet to 10 feet below the slab, at the bottom of the structural gravel pad. Laboratory sample B6 10-12 was collected from the pad/native soil interface and had a field screening result of 24.6 ppm. A few VOCs and glycols were detected, each below the cleanup levels. These results indicated that vertical migration of oily contaminants was unlikely, but some of the more soluble compounds, such as glycols, had migrated either vertically or horizontally with the water in the smear zone beneath the structure. Based on these results, most COCs present above the cleanup level, even in heavily impacted areas, appear to be within a small lens of limited depth and located in the structural prism of the concrete foundation elements. Boring B8, located on the south side of the building, had little surface staining, background range field screening results, and few COCs detected, confirming these observations.

After building cleanup operations were complete, the southeastern Building Perimeter was available for removal of stained soil and characterization. During this effort, contaminated soil was excavated along the face of the structural prism of the building up to a depth of four (4) feet below the top of the slab and up to 10 feet laterally from the slab. This trench/excavation was field screened at 10-foot intervals on both the building side (~2 feet from the slab) and the outside (~7 feet from the slab). Additional excavation was completed if field screening on the outside of the excavation suggested contamination was present. Field screening results at the completion of this work were typically 15 ppm or lower on the outside of the trench and 100 ppm or greater along the structural prism beneath the foundation. Two (2) manual soil borings were advanced up to five (5) feet horizontally beneath the foundation at approximately three (3) feet below the top of the concrete slab. These locations were selected based on field observations. Field screening results generally decreased with distance from the edge of the concrete slab, although most results were above 100 ppm.

Dozens of field screening samples and 24 laboratory samples were collected in the southeast corner area to characterize the soil left at the limits of the excavation. Field screening locations and results are shown in plan view in Figure B4. This data also has been developed into four profile views at different segments of the building. The profile locations are shown in Figure B4 and the individual profiles are shown in Figure B6-B8. Laboratory results are shown on Table 2 and 5.

The field screening results indicate that the highest levels of contamination remain present in the structural prism at the corner of the building. Field screening results decrease within the structural prism with distance to the north and west from the corner, both on the exterior building perimeter and beneath the slab. Field screening results also decrease with distance away from the building.
Laboratory results confirm that contaminants remain above the cleanup level within the structural prism of the concrete foundation. COCs above the cleanup level in one or more samples include DRO, RRO, benzene, ethylbenzene, PCE, and TCE. The results also confirm that the highest levels of remaining contamination are immediately under the foundation and footers in the structural gravel pad.

In each of the profiles, contaminant concentrations decrease with distance from the foundation edge both vertically and horizontally. At five feet from the foundation, the concentrations of the detected COCs have dropped by 2-4 orders of magnitude. At this distance, PCE is the only contaminant of concern that exceeds the cleanup level and is typically about an order of magnitude above the cleanup level. Profile D is the best example of this: the highest PCE concentration (105 mg/kg) is at the foundation edge while results farther under the slab and outside the structural prism of the building are only an order of magnitude above the cleanup level. Profile C shows PCE concentrations very close to the cleanup level about 10 feet from the building. Profile E and other samples that are not included in profiles also show significantly higher concentrations at/near the edge of the concrete relative to concentrations farther from the concrete foundation.

The PCE concentrations at five feet from the foundation are typically about an order of magnitude above the cleanup level. The percent reduction in the COC concentrations suggests that the PCE concentration may be below the cleanup level in a relatively short distance further from the building. However, the only samples that met the PCE cleanup level were on the north side of the primary release point (Profile B) or the VOC results do not meet QC goals for the field duplicate pair. These samples suggest that the PCE concentrations may exceed the cleanup level up to about 10 feet from the building along the southeast corner of the building.

The laboratory results indicate that DRO/RRO contaminants probably account for most of the mass of contaminants along the southeast corner of the building, but these remain only in the visibly oily material within the structural prism of the building. PCE is present at much lower concentrations and total mass, but is present over a larger area within the structural gravel pad. Combined with the PCE observed in the water removed from the perimeter ditches, this data suggests that PCE may have dissolved more quickly in the firefighting water than other contaminants. Although the total quantity was relatively low, this resulted in transportation of PCE across the Site. Other COCs that exceed the cleanup level, including benzene, ethylbenzene, and TCE, are only above the cleanup levels in samples with high DRO/RRO/PCE concentrations. Based on these results, future activities in the southeast corner of the building should be focused on addressing the DRO/RRO/PCE concerns.

Based on the results available, the length of the building perimeter around the southeast corner that has DRO/RRO/PCE contamination beneath the foundation is approximately 45 – 50 feet. Assuming this contamination is centered on the foundation approximately six (6) feet wide (3 feet inside and outside the foundation) and five (5) feet deep, the total volume of DRO/RRO/PCE contaminated soil is 50 – 55 CY. Assuming the soil contaminated with only the lower concentration PCE extends another five (5) feet in both directions and two (2) additional feet deep, this adds an additional 200 – 225 CY for a total estimate volume of contaminated soil around the southeast corner of 250 – 275 CY.

Perforated piping for a vapor extraction system was installed along the southern building perimeter at the completion of the corrective action and characterization efforts. The segment on the east side extends north of Profile B and the segment on the south side includes the full width of the building. An impermeable vapor barrier was installed above this piping and is sealed to the building. The vapor barrier extends 6-8 feet out from the building and is expected to allow evaluation of vapor migration potential and well as vapor mitigation, if necessary. Several inches of clean gravel was then installed and a new RAP surface was placed above the vapor barrier. The RAP surface extends across the eastern driveway area and at least 10 feet south of the building in the southeast corner, creating a further impermeable layer to both precipitation and vapor migration from the contaminated material within the structural prism of the building.

The installed engineering controls in the southeast corner are expected to be adequate for the long-term management of environmental risk related to contamination in the southeast corner. The use of the vapor extraction system, need for additional delineation, and other potential concerns should be evaluated within a risk evaluation for the entire site. This evaluation will identify appropriate long term engineering controls and strategy for the eventual closure of the environmental concerns at the site.

6.4.4 Southwest and West Portions of Building

This section discusses the western half of the Building Perimeter, stretching from the western side of the southern overhead door to the northwest corner of the building and extending about eight feet from the edge of the concrete foundation. The interior was divided into three basic uses: petroleum and parts storage in the south, a paint shop in the middle, and retail store in the north. Figures B9-B12 include data from the southwest and west Building Perimeter from south to north. Soil Profiles G and H also include the southwest and west Building Perimeter.

These figures and profiles also include the West Ditch, located on the exterior of the building west of the Building Perimeter. While these two areas are difficult to distinguish at the site, differences between the release mechanisms and concentrations of COCs in the Building Perimeter and West Ditch indicate that these areas are significantly different and require separate discussions. The dividing line between these two areas is the water line that extends up the west side of the building, approximately 8-10 feet west of the building at a depth of approximately five (5) feet below the top of the concrete slab. This section discusses the Building Perimeter while the West Ditch is discussed in Section 6.4.4, below.

Damage to the interior of the building suggests that the fire burned the hottest in the southwestern portion of the building, possibly due to the presence of material related to the paint shop. A recent shipment of motor oil and other petroleum products were also present in the southern part of this area at the time of the fire. During the fire, firefighters cut openings in the south and west walls to provide access. Oily sludge leaked from these openings during initial cleanup work. The odor on the west side of the building was more consistent with paint products along with petroleum and was substantiated by the damaged paint containers and solvent cans found in this area.

Results in this section are discussed from east to west along the south side, then south to north along the west side of the building. Samples were collected from vertical soil borings adjacent to the building and aprons, excavations of contaminated material from around the building, and horizontal soil borings that were manually advanced beneath the building. Additional soil removal along the west Building Perimeter was limited because the slope to the initial West Ditch excavation was already close to the structural prism for the building. Additional soil excavated from the Building Perimeter during corrective action was estimated at approximately 15 cubic yards.

The field screening and laboratory results on the south Building Perimeter shown in Figures B5 and B9 continue the trends observed in the southeast corner. DRO/RRO/PCE contaminated soil is present beneath the foundation as shown in Profile F and samples to the east, although the PCE concentration is significantly lower in the most contaminated samples. Soil Boring B9 indicates the COC concentrations are lower in this area and probably do not extend as deep beneath the foundation as in the southeast corner. Samples five (5) feet from the building indicate that each COC, including PCE, is below the cleanup level. Overall, these results indicate the zone of contamination along the foundation is less near the southwest corner of the building.

The field screening and laboratory results along the south end of the west Building Perimeter are also shown in Figure B9. These results, including Soil Borings B3 and B4, as well as other characterization samples, indicate the DRO/RRO/PCE trend continues around the corner of the building. The PCE concentration remains lower adjacent to the foundation and the horizontal and vertical extents of DRO/RRO/PCE are 2 -3 feet instead of 5 feet.

Profile G is located on Figure B12. Results from samples in this profile have lower concentrations of the detected COCs. Horizontal borings beneath the foundation indicate that the COCs meet the cleanup levels within two feet of the edge of the slab. Similarly, exterior samples indicate that the area between the building and the water line meet the cleanup levels.

As can be seen in Figure B11, the corrective action excavation for the Building Perimeter stopped when observations and field screening indicated that contamination was no longer present. This was approximately halfway north along the west side of the building and appears to be near the internal wall that separated the warehouse and paint shop portion of the structure from the retail portion of the structure. This was also close to the location that the buried water line turned underneath the foundation. Laboratory samples confirm that this area is not contaminated along the water line, beneath the building, or on the slope of the structural prism for the building.

Based on the results available, the length of the building perimeter around the southwest corner that has DRO/RRO/PCE contamination beneath the foundation is approximately 55 – 60 feet. Assuming this contamination is centered on the foundation approximately four (4) feet wide (2 feet inside and outside the foundation) and three (3) feet deep, the total volume of DRO/RRO/PCE contaminated soil is approximately 25 CY. Assuming the soil contaminated with only the lower concentration PCE extends another one (1) feet in both directions and one (1) additional feet deep, this adds an additional 15 – 20 CY for a total estimated volume of contaminated soil around the southeast corner of approximately 45 CY.

As with the southeast corner, perforated piping for a vapor extraction system was installed along the southwestern building perimeter at the completion of the corrective action and characterization efforts. The segment on the south side extends the full width of the building to the southeast corner. The segment on the north side extends to the end of the corrective action excavation. The impermeable vapor barrier is sealed to the building and extends 6-8 feet out from the building above this piping. The area has been covered with several inches of compacted clean gravel to match the original slopes. RAP is not installed west of the southern overhead door or along the west side of the building.

The installed engineering controls in the southwest corner are expected to be adequate for the long-term management of environmental risk related to contamination in the southwest corner. The use of the vapor extraction system, need for additional delineation, and other potential concerns should be evaluated within a risk evaluation for the entire site. This evaluation will identify appropriate long term engineering controls and strategy for the eventual closure of the environmental concerns at the site.

In addition to the shallow DRO/RRO/PCE concerns at the southwest corner, ethylene glycol concentrations were observed above the cleanup level at 10-11 feet in borings B9 and B4. The potential reasons and concerns related to glycol at this depth are discussed with the groundwater concerns in Section 6.5.

6.4.5 West Ditch

The West Ditch is located along the boundary between the NAPA property and the adjacent property to the west. The West Ditch has been divided into two basic areas based on the contamination that was observed. The West-Southern Ditch was defined as the southern end of this ditch, starting approximately 50 feet south of the structure, and is discussed as a perimeter ditch in Section 6.1.9. The northern remainder of this ditch is referred to as the West Ditch and is discussed in this section. The West Ditch starts west of the northern parking area and slopes gradually to the south between the NAPA building and the building to the west. The West Ditch is well defined between the buildings as each building sits at least five feet above the bottom of the West Ditch. The concrete slab of the NAPA building is located approximately 10 feet east of the original ditch location. The slope of the West Ditch decreases south of the buildings as the lots flattens to the natural grade. For the purposes of this report, the West Ditch extends about 50 feet south of the NAPA structure.

Water and oily sludge appears to have drained from the west side of the building into the West Ditch, which contained bushy vegetation and weeds. The remnants of the oily water and sludge were observed in this ditch following the fire. Until the interior of the paint shop was cleaned, this area had a distinctly different odor than other areas of the Site. The gravel in this ditch did not show the erosion that was evident in other ditches and had no standing water. The top elevation of the stained ditch material was about one foot above the bottom of the ditch, suggesting that less firefighting water drained into this ditch than to other ditches at the site. This may have been due to the fact that the west wall of the building had no openings prior to those made by the firefighting crew for access.

The field screening results and laboratory sample locations for the West Ditch are shown with the southwestern Building Perimeter and Profiles G and H results in Figures B9 – B12. Sample results are summarized in Tables 2 and 5 and the results are grouped by the figure they are shown in. Initial cleanup work completed in June 2011 consisted of removal of the vegetation and related root structures, as well as most of the visibly contaminated soil. Additional corrective action and characterization was undertaken in October 2011.

Physical constraints limiting corrective action activities in the West Ditch included: (1) a buried heating oil tank on the adjacent property to the west, (2) a former well for the adjacent property to the west, (3) the water service line for the NAPA building, and (4) the structural prism of the NAPA building. The depths shown on West Ditch figures were measured from the top of slab and do not represent the depth of contamination within the West Ditch. In general, no more than four feet of soil was removed from any location within the West Ditch.

During the preliminary corrective action in October 2011, a small pocket of heavily contaminated soil was identified with a number of screening results above the expected background levels. Two laboratory samples WDX (Figure B9) and WDXX (Figure B11) were submitted for rush DRO, RRO and BTEX analysis. Preliminary lab results indicated these COCs were below the ADEC cleanup levels. Based on these preliminary results and field screening results during soil removal, the West Ditch was excavated until native gravel was encountered approximately 6-7 feet below top of slab. Approximately 125 CY of contaminated soil was excavated from the West Ditch during the corrective action work.

At the completion of the corrective action work, a visual inspection and field screening was completed at the limits of the excavation. These results were used to collect 25 laboratory samples, including field duplicates, from the floor and walls of the final excavation limits for laboratory analysis. Of the 25 samples, one (1) sample had three (3) COCs above the cleanup level, three (3) had only DRO/RRO above the cleanup level, and six (6) had only PCE above the cleanup level. No COCs were detected in the other 15 samples. The detected COCs appear to be indicative of different types of contamination in different portions of this ditch and each is discussed in detail below.

WD-SC169 and B12

Sample WD-SC169 is located approximately 20 feet south and 30 feet west of the southwest corner of the building. The well casing for the former water supply well is located about 15 feet west of this location. This location had a higher field screening result (24.5 ppm) than most surrounding headspace samples (most less than 5 ppm). Laboratory results indicate that DRO (2850 mg/kg), RRO (16,100 mg/kg), and PCE (0.078 mg/kg) remain above the cleanup level by an order of magnitude or less. The sample was collected at seven (7) feet below the top of the slab, which was about 12 inches below the original ground surface. The field screening and laboratory results were very similar to SB12 6.5-8, collected at the same elevation about 20 feet to the south.

These observations and results indicate that the contaminants penetrated the top 12 – 18 inches of soil in this portion of the West Ditch. The elevated field screening results at B12 and WD-SC169 indicate that the contamination in this area could be identified with the headspace methodology. Most nearby headspace samples, including those close to the B12 location, are at background concentrations. Several other laboratory samples in the area, including a duplicate pair at 10 ppm, meet the ADEC cleanup levels. This data indicates that most of the contamination was removed from this portion of the West Ditch and the WD-SC169 location is a small pocket of contamination that remains after the corrective action was completed. Review of the headspace results indicates that the suspect area is less than 40 square feet. Vertical data from boring B12 indicates that the depth is less than one foot. Using these calculations, the volume of contaminated soil remaining at this location is estimated at less than two (2) CY.

While the DRO is an order of magnitude above the cleanup level, RRO and PCE are closer to the respective cleanup levels. The small quantity of remaining material should be evaluated as part of the site-wide risk evaluation to determine the extent of the hazard posed by this material. If the risk is considered unacceptable, additional assessment samples could be collected to confirm and delineate the extent of contamination. Due to the shallow depth of the material and the limited volume, thermal treatment may be more cost-effective to remove unacceptable long-term risk concerns.

WD-SC121 – WD SC124 and WD-SC126
This group of samples was collected at the bottom of the West Ditch in the area between the NAPA building and the building on the west adjacent property. This area was excavated to a uniform depth of six feet below the concrete slab and about 18 – 24 inches below the original ground surface. Material at this depth appeared to be native material or an older fill than the structural gravel fill brought in during construction of the NAPA building. Field screening in this area was generally between three (3) ppm and six (6) ppm. Laboratory results from these samples show a relatively uniform PCE concentration of about two times the cleanup level. The only exception is WD-SC126, which meets the PCE cleanup level but is slightly above the DRO cleanup level.

Boring B10 is located at the northern end of this area and had similar soil conditions. A sample from 4.5 – 5.5 feet below the top of the slab (very close to the original surface) exceeded the cleanup levels for DRO, RRO, and PCE, while a sample from 6.5 – 8.5 feet met the cleanup levels for all COCs. The B10 data indicates that the contamination most likely does not extend more than six inches below the depth of these samples. The potentially contaminated area is about 40 feet long and 10 feet wide, for an area of 400 square feet. The total volume of contaminated soil remaining at the bottom of the West Ditch in this area is 7 – 10 CY.

While the PCE concentration remains slightly above the standard Method 2 cleanup level, a risk assessment is expected to indicate that this material does not pose an unacceptable risk to human health or the groundwater. The existing results and well-documented conditions of the aquifer in this area are expected to be adequate for this assessment. No additional characterization or corrective action is expected to be necessary during or after the risk evaluation.

WD-SC133 and WD-SC145
These two samples were collected at the north end of the primary excavation in the West Ditch. This location was near the buried heating oil tank for the west adjacent property. Sample WD-SC145 had a field screening result of 32.1 ppm and was expected to exceed the cleanup level, however additional excavation was not undertaken due to structural concerns for the buried heating oil tank. Sample WD-SC133 was collected a short distance from WD-SC145 at the second highest field screening result (8 ppm) in this area.

Laboratory results indicate that WD-SC145 is above the cleanup level for DRO and RRO, but no other COCs (including PCE) were detected. In WD-SC133, DRO is above the cleanup level, RRO is below the cleanup level, and no other COCs were detected. The DRO/RRO ratio in both these samples indicates that RRO, not DRO, RRO is the bulk of the contaminant mass, similar to other areas of the NAPA property. This issue is discussed in Section 5.2 as part of the laboratory quality control and the application to specific concerns is discussed in subsections of Section 6.2. This indicates that this contamination is most likely related to the petroleum contamination from the NAPA site. The field screening and laboratory results from this area indicate that the contaminated soil remaining in place is less than 3 feet wide, less than 15 feet long, and less than one foot deep for a total volume of 2 – 3 CY.

The quantity of soil at this location is considered minor. While the results exceed ADEC cleanup levels, they should be evaluated as part of the site-wide risk evaluation to verify that this location does not pose an unacceptable risk to human health or the environment. Due to small volume of soil, a limited excavation to remove the soil for thermal treatment could be cost-effective and remove any long-term risk concerns. However, the adjacent property owner's buried heating oil tank would have to be addressed to complete a removal action for this material.

WD-SC128

The northern end of the West Ditch is located north of the NAPA building, south of the North Ditch, and west of the northern RAP parking lot. This area did not show direct impacts from the flow of firefighting water, and is not directly connected to the North Ditch. Initial response efforts were limited to no more than six inches of surface scraping and using the area for access to the West Ditch. The area is several feet above the remainder of the West Ditch corrective action excavation. Field screening results in this area were less than 1.3 ppm and laboratory sample WD-SC128 was collected from the highest field screening location in this area. RRO was detected below the cleanup level and PCE was detected at a concentration of 0.0273 mg/kg, slightly above the ADEC cleanup level of 0.024 mg/kg.

Since no other evidence of contamination was observed in this area, this result is considered an anomaly. Although no specific issues were noted in the laboratory data, this result could be the result of laboratory or sampling errors, such as cross-contamination from other samples on the work order. The result could also be due to a small amount of soil being deposited at this location by heavy equipment traffic at some point during the summer. Re-sampling to confirm that PCE remains at this location is recommended to verify that the WD-SC128 location does not require additional remediation. Although no specific issues were noted in the laboratory data, this result could also be the result of laboratory or sampling errors, such as cross-contamination from other samples on the work order. If the result is confirmed, a site-wide risk assessment is likely to document that this material is not considered a significant risk to human health or the environment. If confirmed, this material could also be removed as part of a future corrective action.

6.5 Groundwater

Groundwater in the Van Horn Road area is typically between seven (7) and 15 feet below grade, depending on the local elevation and the time of year. Groundwater elevations are dependent primarily on elevation of the Tanana River to the south and, to a lesser extent, the Chena River to the north and west. High water events in the rivers during spring break-up and August precipitation result in high water throughout the Fairbanks area. Water table elevations generally begin dropping in September and October with low water table conditions present from late fall through early spring (late March). Studies by the USGS and at other contaminated sites in the south Fairbanks area indicate the groundwater flow direction is generally northwest.

As indicated in Section 2.7 and visible in multiple soil boring logs, many of the perimeter ditches were underlain by several feet of silty sand and a fine silt or organic peat layer that supports a perched, saturated layer above the regional water table. In these borings, the regional gravel aquifer was found below the confining layer and several feet of dry or moist silty sand. The perched water appears to be related to precipitation and/or seasonal frost with limited hydraulic connectivity to the regional aquifer.

Under the structure, the native soils were replaced with the structural gravel pad, effectively removing the confining layer in the vicinity of the building. Soil borings adjacent to the building show the gravel fill down to the top of the regional aquifer. Based on the available information, the confining layer has been removed up to approximately six feet from the edge of the concrete slab.

This section discusses the groundwater conditions at the site using information obtained from the soil borings, TSPs, small diameter monitoring wells, and drinking water wells. This information is used to evaluate both the perched water and regional groundwater issues across the site. For clarity, the groundwater results are summarized in Table 4. Well HW1 is located on the parcel two lots west of the NAPA site and is not shown in the figures. The table below differentiates the samples that represent the perched water and the regional aquifer.

6.5.1 Perimeter Ditch Groundwater

Six TSPs were advanced to characterize groundwater beneath the perimeter ditches. Two were advanced into the local perched groundwater to assess the potential for vertical migration of contaminants from the surface water. The remainder were installed to the regional groundwater aquifer to assess the potential for up-gradient sources and down-gradient migration of contaminants from the structural gravel pad beneath the building. The table below summarizes the perimeter ditch samples:

Ditch	SB/TSP ID	Depth / Aquifer	COCs Detected
Northwest	SB21 / TSP10	10 ft bgs / Regional	None
North	SB19 / TSP6	5 ft bgs / Regional	None
Northeast	SB20 / TSP7	4 ft bgs / Regional	None
East Northern	No vertical migration suspected through frost, no TSP necessary		
East Southern	No vertical migration suspected through frost, no TSP necessary		
Southeast	SB16 / TSP3	6 ft bgs / Local	None
South	SB17 / STP4	6 ft bgs / Local	None
Southwest	No contaminants observed in this ditch, no TSP necessary		
West Southern	SB22 / TSP8 & TSP9	4 ft bgs / Regional	None

Based on field activities, observations, and laboratory analysis, no evidence of contamination was identified in the groundwater beneath the perimeter ditches. No further groundwater characterization is necessary in these areas, and they should be considered closed. The data from the adjacent property to the east should be provided to the property owner to document that no contaminants are present, and request Cleanup Complete status for that property from ADEC. Cleanup complete status for each of the perimeter ditches should also be requested.

6.5.2 Structural Prism Groundwater

As indicated above, the native soils within the structural prism of the building were excavated to groundwater and filled with structural gravel when the building was constructed. This structural gravel pad around the building perimeter provides a potential conduit to the groundwater. The contaminated soil remaining around the building perimeter also provided a potential source with higher concentrations of contaminants for a longer period of time than the perimeter ditch areas. The table below summarizes the soil borings that provided information about the potential for dissolved contaminants in the vicinity of structural gravel pad beneath the building.

Location	SB/TSP ID	Relative to Source	COCs Detected
East Driveway	SB18 / TSP5	Up-gradient	None
Northwest Ditch	SB21 / TSP10	Down-gradient	None
North	SB19 / TSP6	Cross-gradient	None
West Ditch	B11/MW2	Cross-gradient edge of Source	Benzene, and DRO
West Ditch	B10/MW1	Down-gradient edge of Source	Glycol, benzene, and DRO

The groundwater results indicate that the TSPs were adequate to identify clean areas on the up-gradient and down-gradient sides of the plume. These results corroborated the laboratory results from the soil borings that indicated groundwater contamination was limited to the structural prism west of the building and the West Ditch area.

Two temporary direct push monitoring wells (MW1 and MW2) were installed in the West Ditch in early June 2011, a few weeks after the fire and the initial removal of contaminated vegetation and a little surface soil. The soil borings adjacent to these wells confirmed that a few feet of contaminated soil remained present at the surface with several feet of clean soil present in the vadose zone (above the water table). The June 2011 groundwater sampling results indicated that trace levels of a half-dozen VOCs and glycols (well below the cleanup levels) were present in the groundwater at both MW1 and MW2. A confirmation sampling event for glycols in MW1 approximately two weeks later indicated that the glycol concentrations had increased with ethylene glycol above the cleanup level.

The second full groundwater sampling event of MW1 and MW2 (MW1B and MW2B) occurred in September 2011 along with the collection of laboratory samples from the TSPs. Samples MW1B and MW2B were collected from MW1 and MW2 respectively. In both of these samples, DRO exceeded the cleanup level by an order of magnitude and two VOCs (benzene and methylene chloride) were detected above cleanup levels. Methylene chloride has not been detected in any characterization sample at the site and is considered a laboratory contaminant as discussed in Section 5.2. PCE was detected below the cleanup level in MW2 and not detected in MW1. A total of 11 other VOCs were detected in concentrations below cleanup levels. Glycols were not detected in either monitoring well.

These groundwater results combined with the soil boring data suggests that glycols migrated relatively quickly through the gravel pad during and shortly after the fire. Profile F includes boring B9 and Profile G includes boring B4. These two (2) borings have ethylene glycol concentrations that are less than an order of magnitude above the cleanup level at 10-11 feet below the top of the slab, at the transition from the structural gravel pad to native silty sand beneath the building. These two (2) soil samples are the only soil samples with ethylene glycol concentrations above the cleanup level. Boring logs indicate that the soil was moist, but not saturated, at this depth. The chemistry of glycols indicates that they would have mixed quickly into the firefighting water. This mixture then migrated down through the porous gravel pad to the native soils just below the gravel pad. The finer matrix of the native silt/sand adsorbed some of the glycol to the soil. The remaining dissolved glycols, and most likely the adsorbed glycol as well, then attenuated into the aquifer to the extent that glycols are no longer detectable in the monitoring wells.

Benzene and DRO were observed at lower concentrations during the first groundwater sampling event, possibly because their solubility is less than that of glycol. The concentrations then increased during the second sampling event as the limited quantities of these compounds that were transported with the firefighting water to the smear zone dissolved into the groundwater. Existing soil data suggests that these COCs are not migrating vertically in the soil from the remaining soil beneath the structure, so the dissolved concentrations in the monitoring wells are expected to decrease as these compounds continue to attenuate naturally in the aquifer.

TSP 10 in Northwest Ditch (NW-TSP10) is approximately 200 feet down-gradient of MW1. As discussed above, no COCs were detected in this TSP. This suggests that the glycol and other dissolved COCs are attenuating rapidly in the aquifer and are unlikely to migrate a significant distance from the source area at the building perimeter.

Periodic sampling of the MW1 and MW2 is recommended to document the conditions adjacent to the source area and at the property line. A two-year monitoring plan to characterize groundwater is recommended to establish a baseline and trends. Sampling events at both high and low water period each year will result in a total of (4) four sampling events. The initial low water event should be prior to March 31, 2013 and water elevations should be relatively comparable to the September 2011 conditions. A second event in May 2013 would provide the first high water event. An interim report documenting these results is recommended to evaluate if additional off-site delineation may be warranted.

The primary limit to the down-gradient delineation of contaminants is the presence of the building on the adjacent property to the west. As indicated above, MW1 and MW2 are very close to the property line and less than 15 feet from the building. This adjacent building is approximately 90 feet wide, significantly limiting the area available for assessment. Many similar dissolved contaminant plumes in Fairbanks with relatively low source area concentrations do not extend more than 100 feet from the source. The existing data from TSP 10 suggests that migration from this source is also likely to be limited and the need for additional delineation should be determined based on the interim reporting from the first year of periodic sampling events described above. If additional delineation is necessary, most of the work will be on the adjacent property and dependent on permission from that property owner for access.

6.5.3 Nearby Groundwater Concerns

Two (2) nearby groundwater wells have been identified and addressed during Site characterization efforts. The adjacent lots containing these wells have GHU water connections established which are currently being used. While these wells are still present, the users of the buildings are not dependent on these wells for drinking water or for other uses.

The nearest well, located on the west adjacent parcel, is near the southeast corner of building at the southern limit of the West Ditch. The well has not been properly maintained or decommissioned. The property owner has indicated the well is to remain in its current condition and unused. The uncapped six inch diameter well has several wires and copper lines running near and through it. A blockage about 10 feet below the top of the well casing has limited sampling efforts. Two separate attempts to sample the groundwater within the well were not successful due to the blockage. Contaminated soils have been identified on the surface soils near the well. MW1 is located about 50 feet north of the Club Soda property well and the West Southern Ditch TSP (TSP8) is located to the south. Results from these locations indicate that dissolved COCs migrated northwest from the building perimeter, but that perimeter ditch and driveway areas are not contaminated. Based on these results, the well would not be expected to be contaminated if a sample could be collected. Since the well is not currently connected and does not appear to be functional, no additional assessment is considered necessary.

The second known well (HW) in the area is on the property two lots west of NAPA. The well is capable of being operational and currently hooked up to the commercial building on the property, but the system is switched off by a valve. The water from the well was sampled for Site COCs and metals. Laboratory sample HW01 results from the well indicated eight metal detections. Six of the metals have no established cleanup levels and the remaining two were detected in concentrations of at least one magnitude of order below their cleanup levels. No other COCs were detected. This well was not contaminated from the NAPA site and the available monitoring well results indicate that contamination is not migrating this distance from the site. No additional sampling of this well is recommended at this time. Future sampling should only be undertaken if future evidence suggests that dissolved contaminants may have migrated this distance from the site

Historically in this area, the regional groundwater gradient is generally northwest in direction and towards the Chena River, away from the Tanana River. Both nearby wells are not considered to be within the down-gradient zone of potential impact. ***NORTECH*** recommends proper documentation of the Club Soda well area to be distributed to the well owner to discuss proper decommissioning of the well located in the West Ditch.

6.5.4 Site-wide Groundwater Summary

Based on field activities, observations, and laboratory analysis, no evidence of contamination was identified in the groundwater beneath the following ditches: Northwest, North, Northeast, East Northern, East Southern, Southeast, South, and West Southern Ditch. Interim structural prism groundwater characterization data indicates contamination has not migrated to up-gradient or cross-gradient locations.

Preferential migration of more soluble COCs has been shown in two monitoring wells in the West Ditch. Two nearby drinking water wells have been identified. The closest is on the adjacent Club Soda property, within 100 feet of MW1 and cannot be operated or sampled. The other is more than 1,000 feet away and sampling indicates no COCs are present.

No further characterization action is necessary in the perimeter ditch area and this area should be considered closed. ***NORTECH*** recommends NAPA obtain documentation from ADEC that perimeter ditch cleanup is complete and appropriate cleanup efforts have been carried out. This should be provided to adjacent property owners. Further characterization is necessary at MW1 and MW2 to assess the migration of soluble COCs. A two-year monitoring plan is recommended to characterize groundwater at both high and low water events in MW1 and MW2. The need for additional groundwater sampling should be evaluated after the first two sampling events. ***NORTECH*** also recommends that NAPA notify the adjacent property owner of the proximity of the abandoned well to observed groundwater contamination.

6.6 Exposure Concerns and Risk Management Strategies

The initial CSM from the Site Work Plan identified five complete potential exposure pathways at the time, which were discussed above in Section 2. Mitigation of many of these potential exposure pathways was accomplished through instituting engineering controls, work practices, and safety measures to eliminate and/or minimize exposure of on-site personnel to potential contaminants during spill response and following activities. Furthermore, the spill response and remedial efforts completed to date have resulted in the removal of the primary contaminant source(s) and much of the secondary source contaminated soil from the Site. The subsections below discuss current Site COCs, an updated CSM describing exposure pathways without engineering controls, engineering controls currently in place, and a conceptual risk evaluation for contamination existing on Site. In addition, a brief outline of potential strategies to remediate contaminants in place beneath the building foundation is included. Both the initial and updated CSM are included with this report in Appendix 5.

6.6.1 Contaminants of Concern

Over 230 Site characterization samples have been collected, including 51 initial soil characterization samples and three initial groundwater samples. Based on results from these samples, current COCs are discussed below. SVOCs and dioxins were discontinued as Site COCs during initial characterization based on results from initial samples. The table below summarizes the areas on Site and COCs which currently exceed established ADEC Method 2 Cleanup Levels within those areas.

SITE LOCATION	COCs
Perimeter Ditches	None
Former Waste Storage Areas	DRO and RRO
Driveways	DRO and RRO
Southeast Portion of Building	DRO, RRO, PCE, benzene, ethylbenzene and trichloroethene
Southwest Portion of Building	DRO, RRO and PCE
West Ditch	DRO, RRO and PCE
Perimeter Groundwater	none
Structural Pad Groundwater	DRO, RRO, benzene and ethylene glycol

Petroleum Fractions

The primary petroleum fractions are GRO, DRO, and RRO and each of these fractions exceeded the ADEC cleanup level in samples collected during initial site evaluation. DRO and RRO are the only fractions which have been detected above cleanup levels following corrective action, and both remain COCs for the NAPA Site. These COCs are limited on Site to four (4) locations within the Former Waste Storage Areas in localized areas, the West Ditch, and in the Southwest and Southeast Portions of Building. As discussed in Section 5.2, DRO results are considered to be elevated but most of the contaminant mass appears to be in the RRO range. However, both the Southwest and Southeast Portions of Building have laboratory results of DRO a magnitude of order or more above the cleanup level, and DRO remains a COC onsite, primarily along the southern building perimeter.

Volatile Organic Compounds (VOCs)

Following corrective action, detected VOC contamination was limited to the following analytes: benzene, ethylbenzene, PCE and trichloroethene. Areas with VOCs exceeding cleanup levels are limited to specific locations in the West Ditch, and within the structural gravel prism where the highest concentrations are in the Southeast Portion of Building area. Continued analysis for these four VOCs is recommended during future characterization. Coordination with the lab is recommended to determine if reporting can be reduced to the analytes that are of specific concern in any future reporting.

TAL 23 Metals

Preliminary laboratory analysis indicated that the concentration of most of these metals showed no relationship to the petroleum or VOC concentrations, and that most metals at the site are related to natural sources, not the contamination released at the Site.

ADEC requested confirmation of these findings and Site characterization included metals analysis from the West Ditch and the western Building Perimeter. Metals were detected below ADEC cleanup levels in these areas. As the data confirms initial characterization results, TAL 23 metals are no longer considered a COC.

Ethylene and Propylene Glycol

Preliminary laboratory analysis of Site characterization samples indicated that glycol contaminated locations are limited to the west seep zone within the structural gravel pad prism, and temporary MWs in the West Ditch. Propylene glycol has remained below ADEC cleanup levels throughout Site characterization efforts. Ethylene glycol has generally been detected below cleanup levels, but is seen as high as a magnitude above the cleanup level on Site. Continued groundwater monitoring indicates elevated glycol concentrations may have been reduced to levels below detection through natural attenuation. Although both glycols have not been detected in the most recent MW sampling events, ethylene is the only glycol to have exceeded cleanup levels on Site to date, and should remain as a Site COC until this trend is confirmed. Propylene has not exceeded cleanup levels on Site and was not detected during the most recent groundwater sampling event and should no longer be considered a COC.

6.6.2 Current CSM without Engineering Controls

The current CSM identified the following five complete potential exposure pathways on Site:

- Incidental soil ingestion
- Dermal absorption of contaminants from soil
- Ingestion of groundwater
- Inhalation of outside air
- Inhalation of indoor air

Two exposure pathways are associated with direct contact to contaminated soil: (1) incidental soil ingestion and (2) dermal absorption of contaminants from soil. Incidental soil ingestion is considered minimal as removal of gross surface contamination has been completed on site and all areas have been backfilled with several feet of fill or impervious surfacing preventing human receptor access. Dermal absorption contaminants from soil are identified in Appendix B of the CSM policy guidance, and include arsenic and ethylene glycol. Arsenic has been detected on Site above cleanup levels, but below area background levels and it is not considered a Site COC related to the single release event. Therefore, arsenic is not considered a significant risk for dermal exposure. Ethylene glycol exceeded cleanup levels in groundwater sampling events on Site and within the structural gravel prism, but direct access to these contaminants is limited.

The site uses water supplied by the local utility and on-site receptors do not have access to groundwater for ingestion. While controlling the ingestion of groundwater from off-Site properties is difficult, this exposure pathway is considered to be a minimal risk at present. All of the buildings and facilities in this area that were evaluated are connected to the public water supply. Furthermore, those facilities that maintain the ability to use the local groundwater are not likely to use groundwater as a drinking water source due to the poor water quality known to exist in this area. The only well within the down-gradient migration area from the Site has been tested and no COCs were detected.

The exposure to airborne contaminants can come from two sources: the inhalation of indoor air and inhalation of outdoor air. Outdoor air is considered a potential concern around the exterior of the NAPA building in areas adjacent to the NAPA structure. The interior of the NAPA building is the most likely location for indoor air concerns due to the remaining contamination around the foundation. The adjacent building to the west is also within the distances that are considered a potential concern for indoor air, but contaminants have not been documented adjacent to or beneath that building at this time.

6.6.3 Engineering Controls Currently in Place

Physical barricades exist to reduce access to the Site, including perimeter ditches, signage, and gated driveway access. This reduces the potential for exposure from the direct contact pathways incidental soil ingestion and dermal absorption. Engineering controls for the Site include impermeable surfacing, a vapor barrier, and a passive venting system installed along the southern perimeter of the concrete slab. Several feet of compacted gravel has been installed in areas without these physical barriers. These installed physical barriers and the concrete slab encapsulate the contaminated soils within the structural prism and prevent direct access to the soil. These physical barriers are considered adequate to prevent incidental soil ingestion and dermal absorption of contaminants from the soil.

The primary engineering control for exposure to groundwater is to remove access to groundwater. The NAPA Building and two adjacent buildings to the west all utilize the public water system for drinking water. NAPA does not have a water well and the adjacent property has a water well that is not functional. The third property to the west has a water well that is shut off with a valve and is not used because of the higher quality of the public water. Testing of this water indicated no COCs were present and groundwater results indicate contaminants are unlikely to migrate to this location. No additional assessment of this exposure pathway is considered necessary unless monitoring well results indicate a potential for contaminant migration to the existing well that can be used.

The vapor barrier and piping system was installed to control vapor migration to both indoor and outdoor air. Combined with the exterior surfacing and the building slab, the potential for vapor migration to breathing zone air is considered minimal. Beneath these barriers, the piping system was installed near the bottom of the foundation and the top of the remaining contaminated soil to collect vapors if necessary. Although soil results indicate that some soil contamination is present beneath the slab, the piping system is expected to collect vapors from both the exterior and interior of the foundation.

The piping system should be utilized as the primary means to evaluate the need for long-term operation of a vapor mitigation system through a passive or active assessment program. With proper design, a passive sampling program should be able to evaluate the conditions in the soil immediately beneath the slab, similar to a sub-slab soil boring. An active sampling program should also be able to mimic the results of a sub-slab depressurization system and provide an indication of the contaminant mass that may be present in the soil vapor. Any evaluation of the vapor migration pathway should be completed under a work plan that is reviewed and approved by ADEC. The results of this assessment should be utilized in conjunction with existing soil and groundwater results to determine if additional vapor migration assessment is necessary at either the NAPA Building or the adjacent building.

As with any contaminated site, future remediation efforts are the most likely mechanism for future exposure to the remaining contaminants. The structure has been recently re-built and this building configuration is expected to remain for many years. All future assessment and remediation work will be undertaken following a work plan that is reviewed and approved by ADEC.

6.6.4 Risk Evaluation

A site-specific risk evaluation should be completed for a risk-based closure of the soil contamination in the following areas: the West Ditch, the South Driveway and the Former Waste Storage Areas. Site conditions suggest this commercial/industrial area that in a low precipitation environment may be suitable for closure through the development of alternative soil cleanup levels. Based on Site conditions, the ADEC Method Three Calculator may be used to develop alternative soil cleanup levels and cumulative risk for the Site. This would allow contamination below certain concentrations to remain on site without additional remediation as long as the property continues to be used as it currently is.

The calculation of alternative cleanup levels for soil at the site will not alter the groundwater cleanup criteria or the vapor migration screening criteria. The groundwater assessment outlined in Section 6.5.2 should be undertaken to evaluate the risk posed by groundwater at the site. Similarly, the vapor exposure pathways should be evaluated as outlined in Section 6.6.3.

6.6.5 Potential Remediation Strategies for Beneath the Building

Remediation strategy selection is highly dependent on the outcome of discussed risk evaluations for each COC. Analysis of laboratory data collected during the 2013 field season will provide current COC concentrations at the Site and guidance concerning future site conditions. The following are potential strategies to reduce the mass of contaminants in the soil beneath the building.

- Natural Attenuation
- Sub-Slab Vapor Extraction
- In-Situ Remediation

Natural Attenuation

This method is the least intrusive and involves the most risk, as some COCs on Site are known to be more persistent than others. Many different parameters, such as soil characteristics and weather, are considered and used to estimate the existing ecosystems ability to reduce the mass of contaminants over time. Several years of annual sampling would be necessary establish the viability of natural attenuation and a long-term periodic sampling program may be necessary until cleanup levels are achieved. Some other form of remediation may also be necessary if natural attenuation does not achieve the necessary cleanup levels prior to a change in land use at the property. While this approach is relatively inexpensive on an annual basis, the periodic sampling is like to be on-going for many years.

Sub-Slab Vapor Extraction

Both passive and active vapor extraction systems are expected to be effective in reducing the mass of COCs at the Site. Currently, a piping system is installed along the south side of the concrete pad. Operating passively, this can collect the volatilized COCs and vent them to the open air. Active extraction requires a mechanical apparatus to draw air out of the piping system. This method of remediation is likely to take several years because contaminants have to be volatized from their existing state and then drawn out through the system. The primary costs are the system hardware, electrical use for an active system, and periodic monitoring of both the system and the conditions in the ground. The vapor intrusion assessment should be utilized to determine if either of these options is likely to significantly increase the rate of mass reduction at the site.

In-Situ Remediation

Contaminated soils remaining in place are potential targets for in-situ remediation due to the relatively limited quantities and known areas of contamination. This type of remediation typically has the highest initial costs of the remediation options, but has the benefit of being completed quickly. Possible in-situ bioremediation strategies include enhanced aerobic degradation or enhanced anaerobic degradation through the injection of nutrients and bacteria into the contaminated areas. In these strategies, the contaminant mass is reduced as the selected bacteria consume the contaminants as an energy source.

An alternative to injection of non-native bacteria is chemical oxidizers which may be injected into the contaminated soil as gas or liquid. This would result in the direct destruction of organic material, including the documented contaminants, through contact with the oxidizing agent. A monitoring plan would be necessary to evaluate the conditions prior to, during, and after implementation of remediation via chemical injection. The existing soil data is expected to be adequate to develop an order of magnitude of the relative costs and likely success of these remediation strategies.

6.7 Future Site Management

As indicated in other sections of this report, ADEC has been actively involved in the emergency response, initial cleanup, and site characterization efforts at this facility. This report should be submitted to ADEC to document the completion of the approved site cleanup and characterization plan including remediation efforts and the contamination that remains in place at the site. ADEC is expected to review the report and provide comments related to the regulatory implications of the existing conditions and the recommendations for future exposure mitigation.

Following this review, ADEC is expected to request a work plan to address the technical and regulatory issues that remain at the site. The conceptual and specific recommendations outlined in this report are expected to be the basis of the work plan, while the specifics details will be determined through the approval process. The goal of this work plan should be to identify and implement strategies that result in the long-term management and remediation of the contamination that remains in place at the site.

7.0 CONCLUSIONS AND RECOMMENDATIONS

NORTECH has completed soil and groundwater characterization efforts at the NAPA facility located at 1937 Van Horn Road, in Fairbanks, Alaska. The initial release occurred during a fire and associated firefighting activities on May 26, 2011. Spill response at the Site began the following day with delineation and collection of free product, contaminated water, and oily soil on the property and adjacent properties. Exterior spill response activities during May and June 2011 consisted of vacuuming free product and contaminated water from perimeter ditches, spreading absorbent material, and excavation of visibly contaminated soil. Once the building was stabilized in June 2011, interior cleanup response activities in June, July, and August resulted in the containment, collection, and removal of products and inventory within the building.

NORTECH provided professional oversight of spill cleanup, waste management, and excavation activities during the initial response activities. During this time, ***NORTECH*** worked with NAPA and ADEC to develop the site cleanup and characterization plan that was approved in September, 2011 and implemented in September and October 2011. Over 1,100 soil samples were collected for field screening to segregate contaminated soil during excavation and delineate contaminated soil at excavation limits. Over 230 laboratory samples were collected to characterize wastes and conditions at the Site. Subsurface investigation included 21 soil borings, 10 temporary sampling points, and two monitoring wells.

Exterior cleanup and remediation efforts resulted in the collection of approximately 1,500 cubic yards of contaminated soils and 28,000 gallons of oily water. This material has been characterized and disposed of at appropriate facilities. Excavated areas within the developed portions of the lot have been backfilled. A vapor barrier and perforated piping system has been installed along the south building perimeter where contaminated soil remains within the structural prism of the building. The damaged steel structure was removed in October 2011 and a new structure was constructed on the original concrete foundation in 2012.

Based on the field observations, field screening results, laboratory data, and other information gathered during the initial response activities and these site characterization efforts, ***NORTECH*** has the following conclusions and recommendations regarding the Site.

Perimeter Ditches

- The following Perimeter Ditches meet the ADEC Method 2 cleanup levels for all COCs: Northwest, North, Northeast, East Northern, East Southern, Southeast, South, Southwest, and West Southern Ditch
- No further characterization or remedial action is considered necessary in this perimeter ditches

- A cleanup complete determination for these perimeter ditch areas is requested to provide documentation of the status of these areas to adjacent property owners

Former Waste Storage Areas

- Former waste storage areas covering approximately 23,500 square feet were identified and assessed
- Most former waste storage areas meet the ADEC Method 2 cleanup levels for all contaminants of concern
    - No further assessment or remediation is recommended in these areas
    - Documentation that these areas are no longer a concern should be provided in the file
- Three locations exceed the ADEC cleanup level for DRO: Southern Pit 8, Pit 7, and the 5Y-SC109 location
    - DRO concentrations are just above established cleanup levels
        - Laboratory chromatographs indicate the elevated DRO levels are due to heavier-weight petroleum fractions such as lightweight motor oil.
        - Risk assessment is recommended.
        - RRO contaminants meet the ADEC Method 2 cleanup level
        - Nearby results indicate these areas total no more than 3 CY
    - An evaluation of the risk of these specific concentrations and volumes of contaminated soil is recommended to determine if:
        - Alternative cleanup levels are be appropriate for these locations
        - Existing documentation is adequate for closure of these concerns
- Approximately 3,000 square feet of the southern stockpile area could not be fully characterized in 2011 due to the presence of contaminated soil stockpiles
    - The stockpiles were removed in October 2012 but could not be characterized due to winter conditions
    - These areas should be characterized following the approved work plan when conditions permit in 2013

Driveways

- The RAP surfaces remained impermeable
    - No contamination was observed beneath the RAP surfaces
    - The original RAP has been collected for reprocessing into new RAP
    - A new RAP surface has been installed in these areas
- The gravel surfaces have been characterized and assessed as described in the work plan
    - Locations with surface staining or other evidence of contamination have been removed
    - All laboratory results in these areas meet the ADEC Method 2 cleanup levels

- Documentation that these areas are no longer a concern should be provided in the file

Building Perimeter

- No evidence of contamination was observed within the interior of the slab
    - The slab was intact with no cracks and minimal other damage
    - Floor drains were cleaned and winterized to prevent damage
    - Dye testing is recommended to verify integrity after new construction
- The northern half of the Building Perimeter meets the ADEC Method 2 cleanup levels
    - No further assessment or remediation is recommended in these areas
    - Documentation that these areas are no longer a concern should be provided in the file
- Contaminated soil remains within the structural prism of the southern end of the building
    - A shallow lens of contaminated soil remains below the concrete foundation
        - The lens extends from the overhead door on the east side of the building, across the south side of the building, and 27 feet north on the west side of the building
            - The lens extends approximately five feet radially from the base of the grade beam near the south east corner
            - The lens tapers down to the west and extends approximately three feet radially from the grade beam near the southwest corner of the building
            - DRO concentrations are typically between 597 mg/kg and 7,190 mg/kg
            - PCE concentrations on the east side are around 105 to 216 mg/kg and decrease to 0.482 to 0.77 mg/kg on the west side
            - Other contaminants that exceed the ADEC cleanup level in this area are: RRO, benzene, ethylbenzene, TCE. Only RRO is present on the west side. The others are present only in the southeast corner.
        - The concrete slab, a vapor barrier, perforated piping, and impervious surfacing are present and act as engineering controls
            - These materials prevent infiltration, direct contact with the soil, and reduce the potential for vapor migration to the surface
            - The perforated piping can be used for vapor mitigation and remediation as necessary
        - The existing is expected to be adequate to:
            - Develop a vapor intrusion assessment plan

        - Complete a risk evaluation to determine the appropriate remediation and long-term management strategy
    - Some contaminants exceed the ADEC Method 2 soil cleanup level at approximately 10 feet below the slab at limited locations at the groundwater smear zone on the south and west sides of the building
        - This contamination is separated from the shallow contamination by at least five feet of clean soil
        - This smear zone contamination should be managed as part of the overall groundwater program

West Ditch

- The West Ditch is separated from the Building Perimeter by the buried water line and an area of clean soil
- West Ditch excavations were limited by a water line on the east and the well and buried heating oil tank on the property to the west
- Most of the impacted surface area in the West Ditch now meets the ADEC Method 2 cleanup levels
- DRO and PCE remain above the ADEC Method 2 cleanup level at a few well-defined locations
    - WD-SC169 and B12 (Figure B9)
        - DRO, RRO, and PCE concentrations exceed ADEC cleanup levels.
        - Quantity of soil expected is less than 2 CY.
        - Recommended additional risk assessment is likely to indicate no further action is required.
    - WD-SC121 to WD-SC124, WD-SC126 (Figure B9)
        - DRO, RRO, and PCE exceed ADEC cleanup levels.
        - Quantity of soil expected is 7-10 CY.
        - Additional risk assessment is recommended.
        - If site closure cannot be achieved as a result of additional risk assessment, excavation and thermal remediation are recommended.
    - WD-SC133 (Figure B11):
        - DRO and RRO concentrations exceed ADEC cleanup levels.
        - Quantity of soil expected is 2-3 CY.
        - Additional risk assessment is recommended.
        - If site closure cannot be achieved as a result of additional risk assessment, excavation and thermal remediation are recommended.
    - WD-SC128 (Figure B13):
        - PCE concentrations exceed ADEC cleanup levels.
        - Resampling is recommended to confirm presence of PCE in excess of ADEC cleanup levels.

        - Additional risk assessment is likely to indicate no further action is required.
- Future activities and long term management of remaining contamination in the West Ditch may require cooperation with the adjacent property owner

Groundwater

- A perched water layer was encountered several feet above the regional aquifer in the perimeter ditches
    - No contaminants of concern were detected in either the perched layer or the regional aquifer
    - No further characterization or remedial action is considered necessary in these perimeter ditches
    - A cleanup complete determination for these perimeter ditch areas is requested to provide documentation of the status of these areas to adjacent property owners
- Contaminants reached the regional aquifer on the west side of the structural gravel pad
    - Dissolved DRO, benzene, and glycol concentrations exceeding the ADEC cleanup levels have been reported in the two monitoring wells
    - Soil borings indicate that smear zone contamination is present on the south and west sides of the building. Dissolved or soil contaminants were not detected in down-gradient or up-gradient locations

- A monitoring plan is recommended for structural pad groundwater
    - A two-year plan to characterize groundwater at both high and low water events is recommended
        - This should start with low water conditions prior to breakup in the spring of 2013
        - The need for additional temporary sampling points or monitoring wells to delineate dissolved contaminants should be evaluated after the first high water event in June/July 2013
    - The monitoring program is expected to be adequate to establish trends for the dissolved COCs
- Two potential drinking water wells have been identified down-gradient of the site
    - One damaged well is located south of the adjacent building
        - Attempts to sample this well indicate that the well is obstructed
        - The well is not currently connected to the facility
        - The facility uses the public water system for water
        - No additional investigation is necessary
        - The adjacent property owner should be encouraged to properly decommission this well
    - One usable drinking water well has been identified two lots west of the site

        - The well is currently connected to the structure but is not currently used
        - The public water system is utilized for water
        - Laboratory results indicate contamination is not present in this well
        - Additional testing is not necessary unless the monitoring program identified potential concerns

Exposure Concerns and Risk Management

- The following five exposure pathways have been identified by the CSM as potentially complete
    - Incidental soil ingestion
    - Dermal absorption of contaminants from soil
    - Ingestion of groundwater
    - Inhalation of outside air
    - Inhalation of indoor air
- The exposure pathways are controlled by the following engineering controls or site conditions:
    - Physical barriers reduce potential contact with the soil for incidental ingestion or dermal absorption
    - Groundwater is not used at the site or the adjacent down-gradient property with potential groundwater contamination
    - The potential for vapor migration to indoor and outdoor air is reduced by physical barriers
- Exposure and long-term management of the remaining contamination at the site should be managed through a site-specific risk-based evaluation
    - Existing site-specific and regional aquifer data is adequate to develop site-specific alternative cleanup levels for soil at the site
    - Additional testing of existing monitoring wells should be used to
        - Determine if additional delineation of dissolved contaminants is necessary
        - Develop a long-term monitoring program, if necessary
    - The existing perforated piping system should be used to evaluate the potential for exposure vapor migration
    - The results of these evaluations should be used to determine the most appropriate remediation strategy to be protective of human health and the environment

Administrative Management

- This report should be provided to ADEC to document:
    - The remediation efforts that have been undertaken
    - The locations and concentrations of remaining contamination
    - The conceptual recommendations for evaluating and managing exposure pathways

   - recommended strategies for permanent encapsulation of the remaining contamination
- Future coordination with ADEC is expected to include:
   - Report review and regulatory comments
   - Review and approval of work plans for assessment and/or remediation activities
   - Approval of long-term management and monitoring strategies

8.0 LIMITATIONS AND NOTIFICATIONS

NORTECH provides a level of service that is performed within the standards of care and competence of the environmental engineering profession. However, it must be recognized that limitations exist within any site investigation. This report provides results based on the analysis and observation of a limited number of samples considering the size and scope of work conducted. Therefore, while these limitations are considered reasonable and adequate for the purposes of this report, actual site conditions may differ. Specifically, the unknown nature of exact subsurface physical conditions, sampling locations, the analytical procedures' inherent limitations, as well as financial and time constraints are limiting factors.

The report is a record of observations and measurements made on the subject site as described. The data should be considered representative only of the time the site investigation was completed. No other warranty or presentation, either expressed or implied, is included or intended. If it is made available to others, it should be for information on factual data only, and not as a warranty of conditions, such as those interpreted from the results presented or discussed in the report. The undersigned certify that except as specifically noted in this report, the statements and data appearing in this report are in conformance with ADEC's Standard Sampling Procedures and the approved work plan. ***NORTECH*** has performed the work, made the findings, and proposed the recommendations described in this report in accordance with generally accepted environmental engineering practices.

9.0 SIGNATURES OF ENVIRONMENTAL PROFESSIONALS

NORTECH is a Fairbanks-based, professional consulting firm, established in 1981, offering environmental engineering, civil engineering, and industrial hygiene consulting services. ***NORTECH*** has offices in Fairbanks, Anchorage and Juneau and has completed hundreds of environmental, health, and safety projects across Alaska.

Ronald J. Pratt, Environmental Scientist for ***NORTECH,*** has a B.S. in Geography and a Masters of Environmental Studies Degree. Mr. Pratt has more than 19 years of professional experience conducting environmental site assessments, hazardous materials investigations, remedial investigations and other environmental field work throughout California, Washington and Alaska.

Ronald J. Pratt
Environmental Scientist

Peter Beardsley, PE, Environmental Engineer for ***NORTECH*** has a B.S. degree in Environmental Engineering and has been in responsible charge of ***NORTECH***'s Environmental Program for the last four years. He is a registered professional engineer in Alaska (CE 10934) and has over 14 years of experience as a consulting environmental engineer. He has worked on all aspects of environmental assessments, field investigations, and cleanup efforts and is well versed in applicable regulatory requirements.

Peter Beardsley, PE
Environmental Engineer

Appendix 1

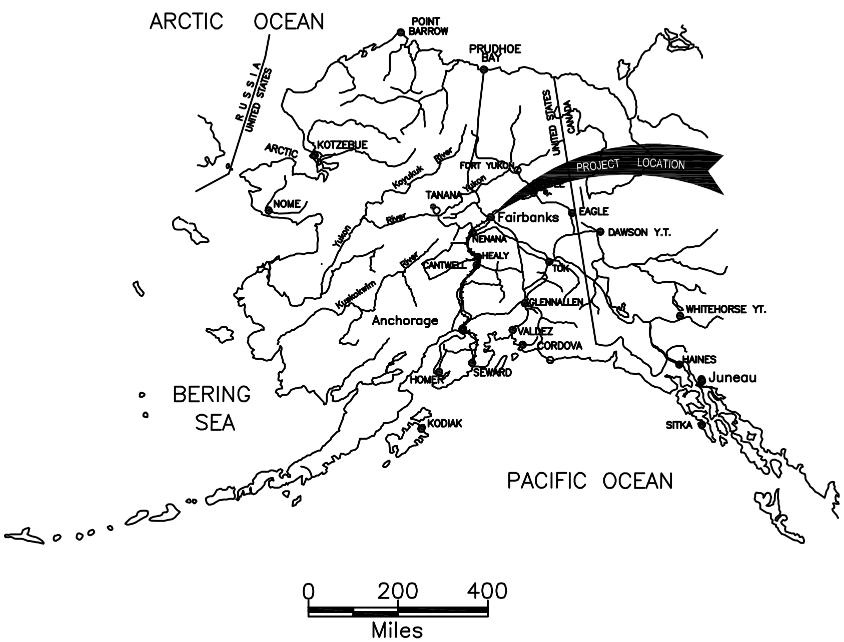
Figures

NAPA Van Horn Road Site Characterization

Fairbanks, Alaska

January 18, 2012

Project #: 11-1042



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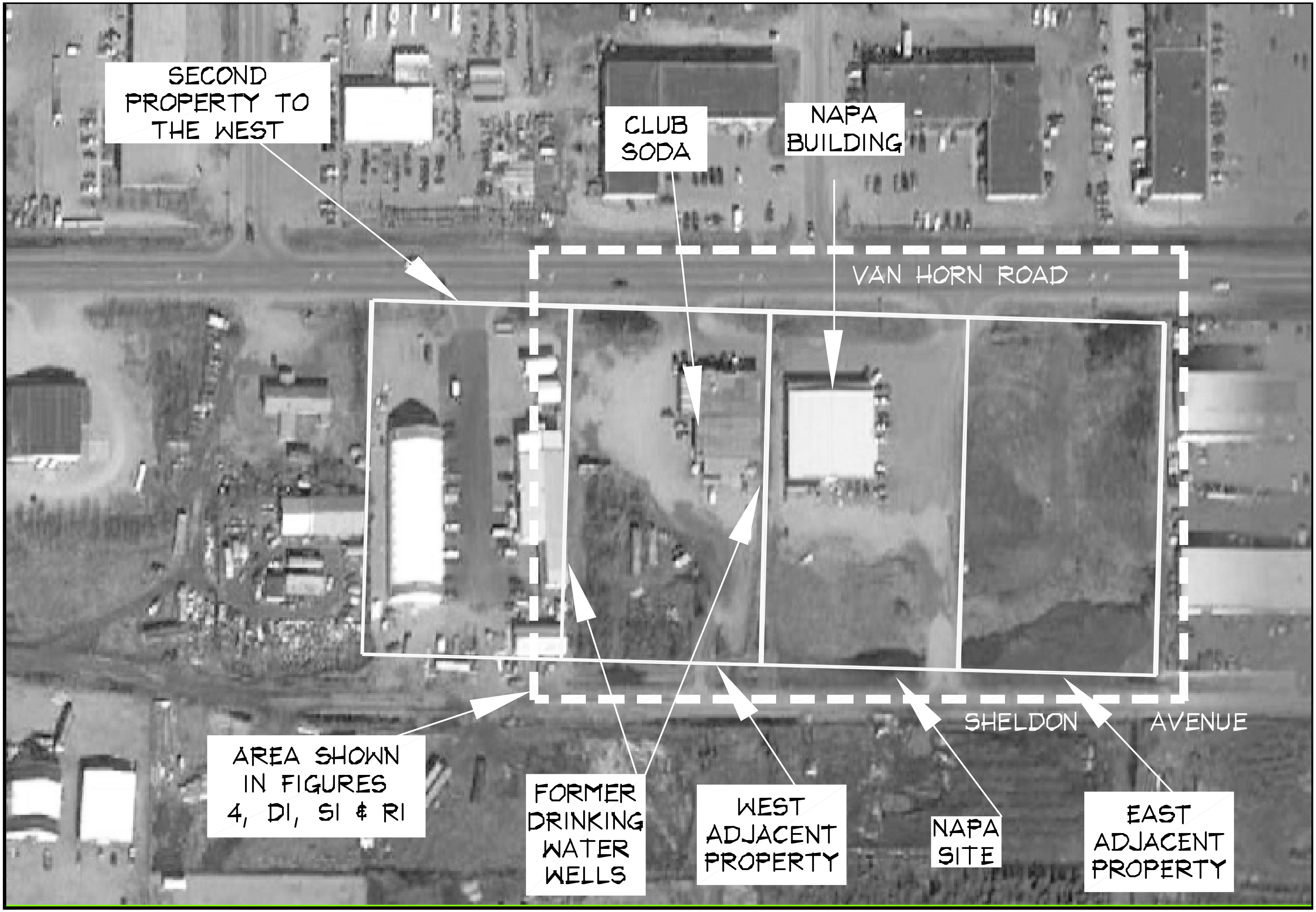
Location Map
NAPA Van Horn Road Site Characterization
Fairbanks, Alaska

DATE: 01/18/2013	SCALE: 1"=500'
DESIGN: PLB	PROJECT: 11-1042
DRAWN: PEF	DWG: 111042J(02)

FIGURE 2



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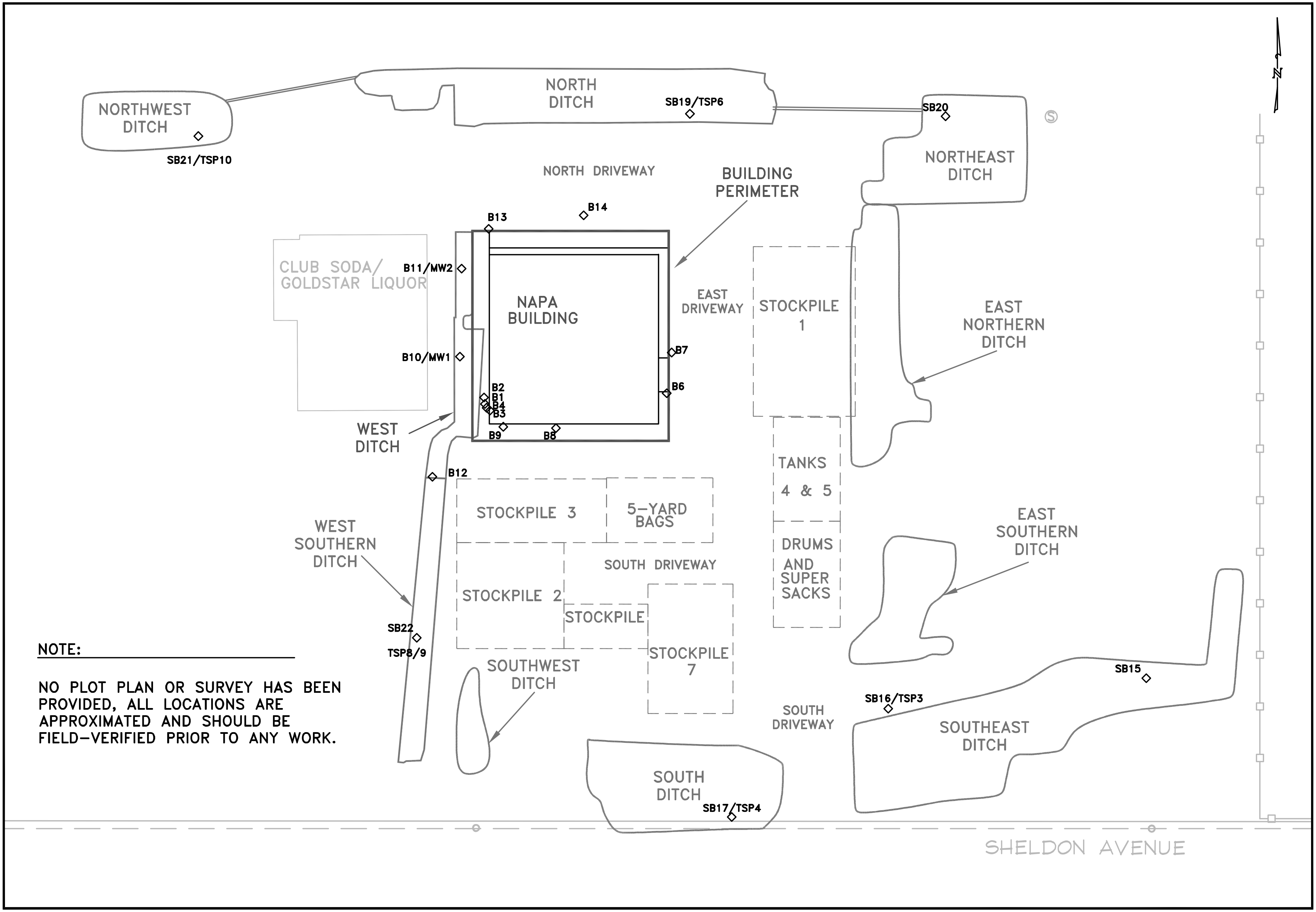

NOTE:

NO PLOT PLAN OR SURVEY HAS BEEN PROVIDED, ALL LOCATIONS ARE APPROXIMATED AND SHOULD BE FIELD-VERIFIED PRIOR TO ANY WORK.

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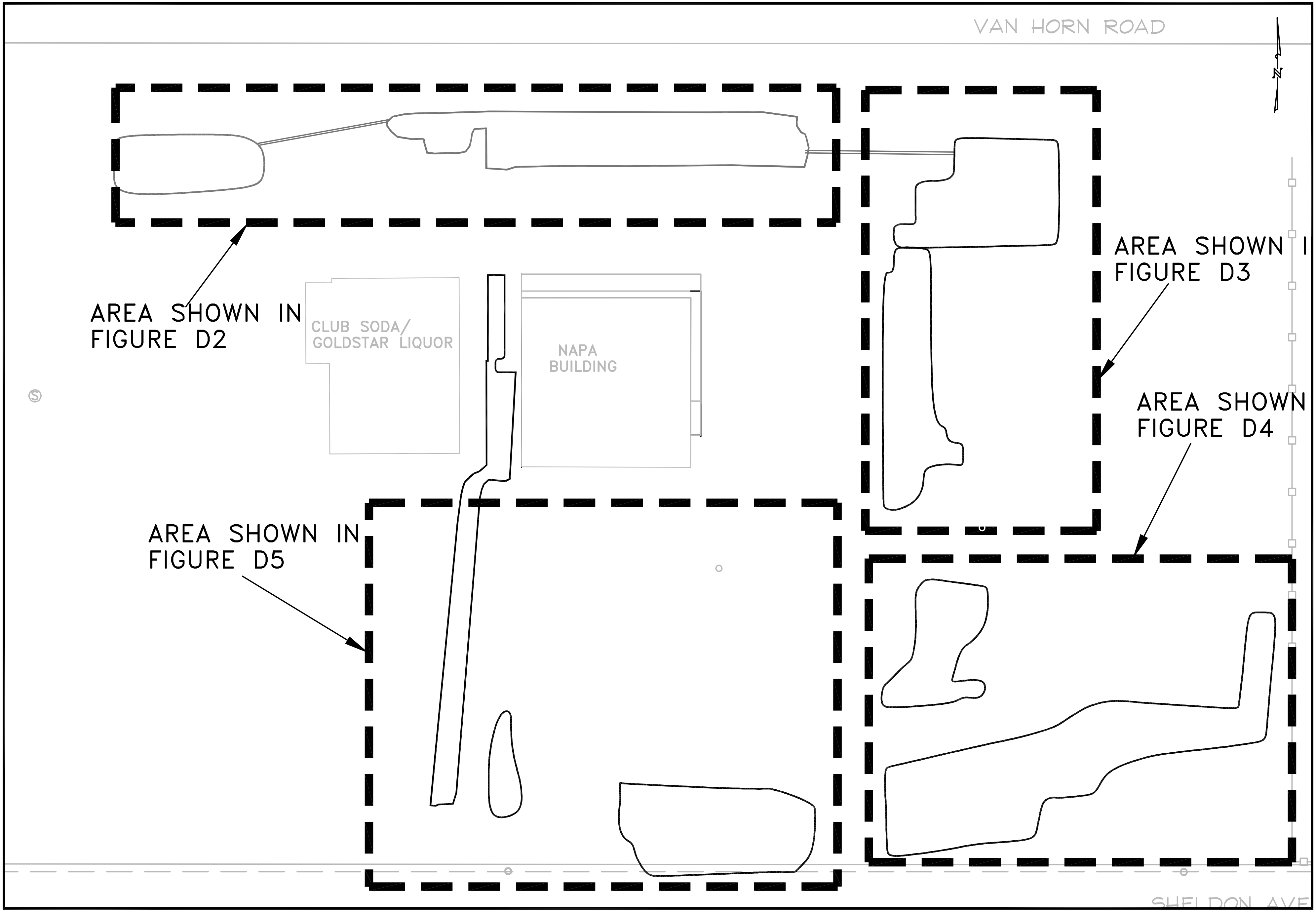
Site Diagram - Assessment Areas
NAPA Van Horn Road Site Characterization
Fairbanks, Alaska

DATE: 01/18/13	SCALE: 1'=75'
DESIGN: PLB	PROJECT: 11-1042
DRAWN: PEF	DWG: 111042J(04)

FIGURE 4



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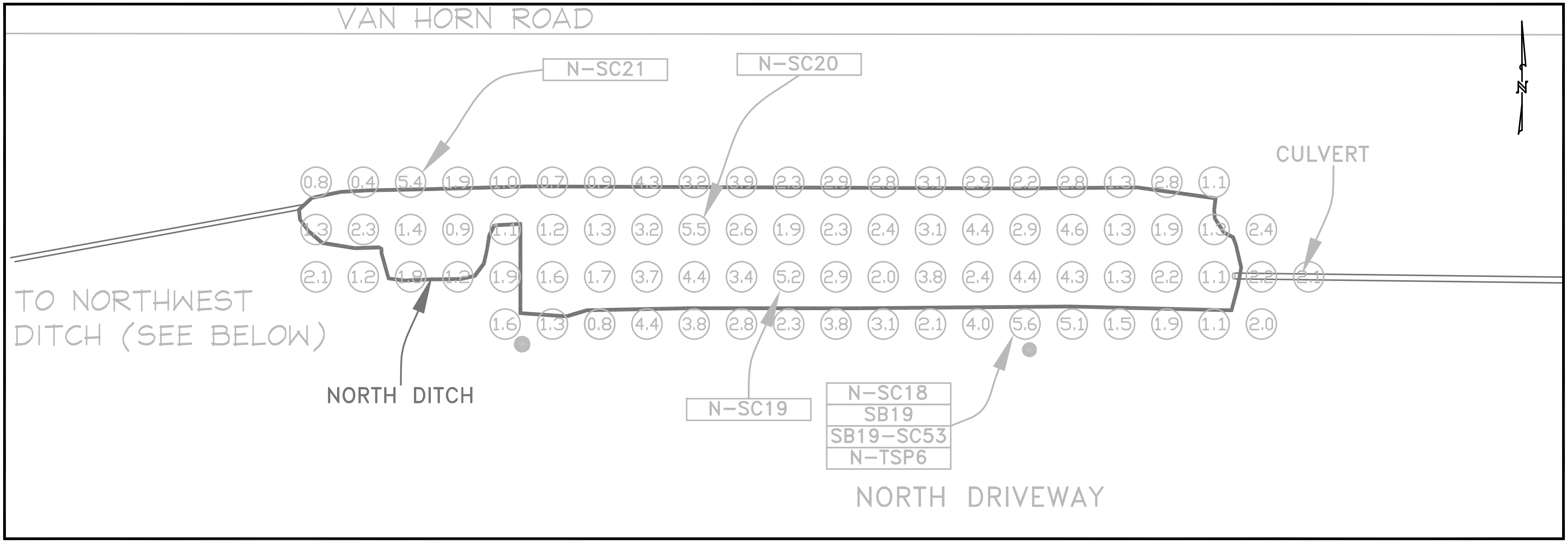
Perimeter Ditches - Site Diagram
NAPA Van Horn Road Site Characterization
Fairbanks, Alaska

DATE: 01/18/13	SCALE: 1" = 75'
DESIGN: PLB	PROJECT: 11-1042
DRAWN: PEF	DWG: 111042J(D1)

FIGURE D1

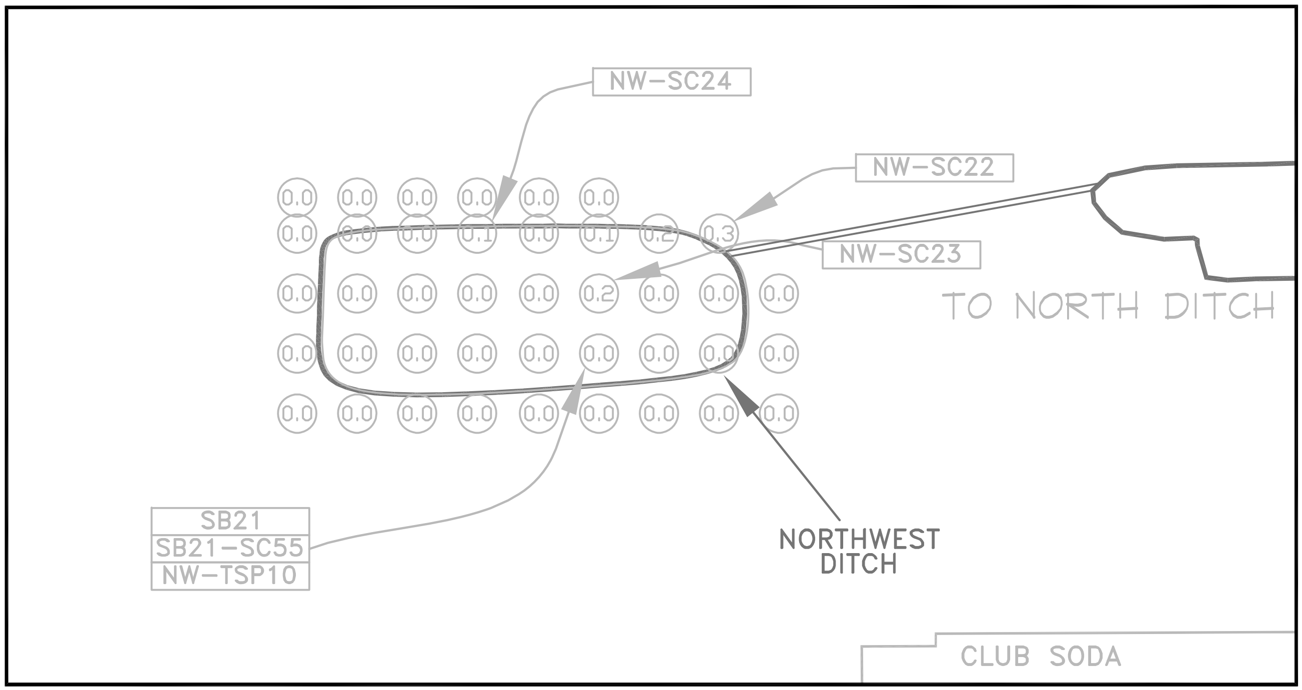


KEY

- UTILITY POLE
- DITCH
- ROAD
- XX-XXXX SAMPLE LOCATION
- X.X PID

NOTE:

1. BOLD SAMPLE LOCATION INDICATES RESULT EXCEEDS ADEC CLEANUP LEVELS



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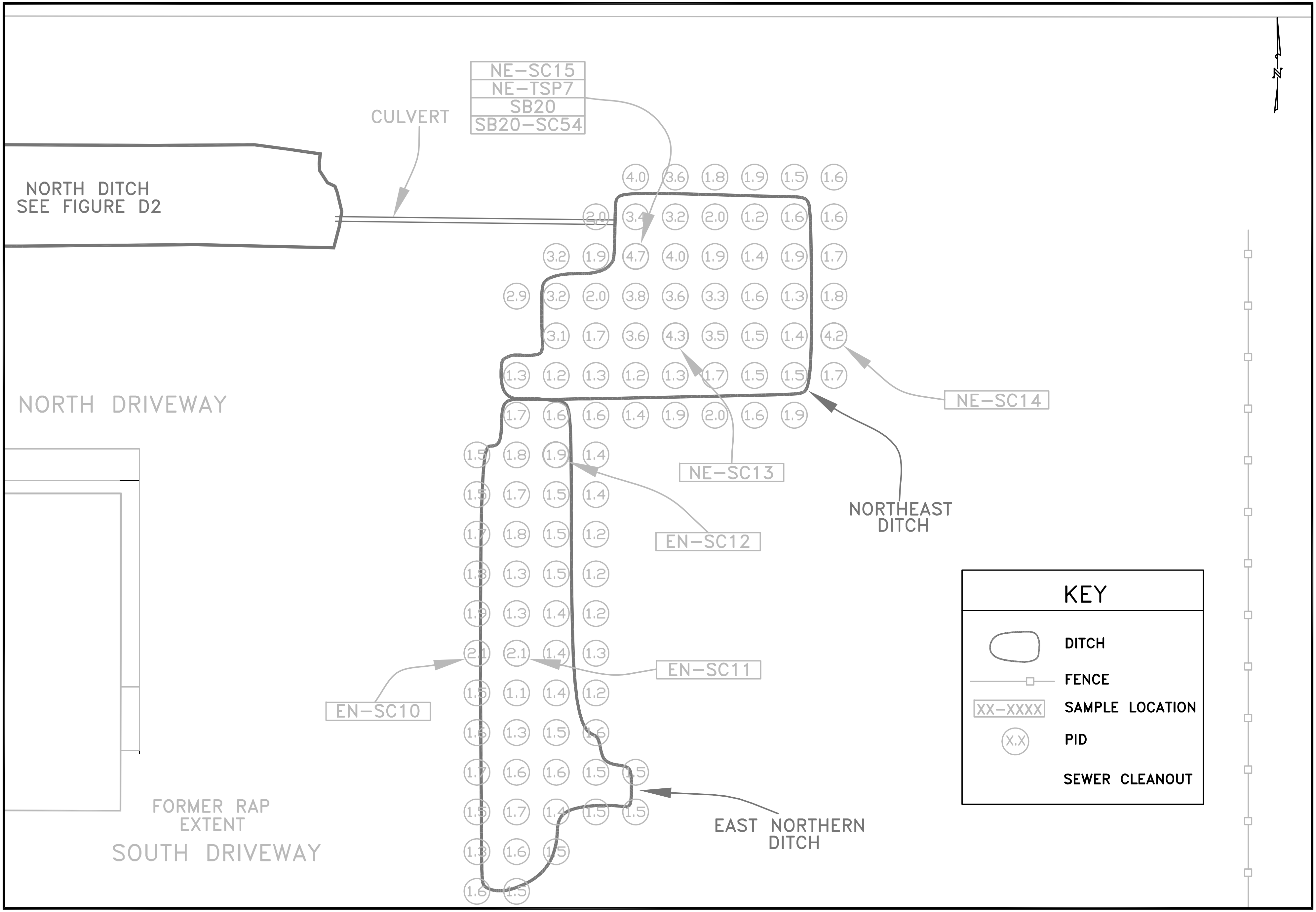
Field Screen and Lab. Sample Locations
North & Northwest Ditches
NAPA Van Horn Road Site Characterization, Fairbanks, AK.

DATE: 01/18/13	SCALE: 1" = 40'
DESIGN: PLB	PROJECT: 11-1042
DRAWN: PEF	DWG: 111042J(D2)

FIGURE D2



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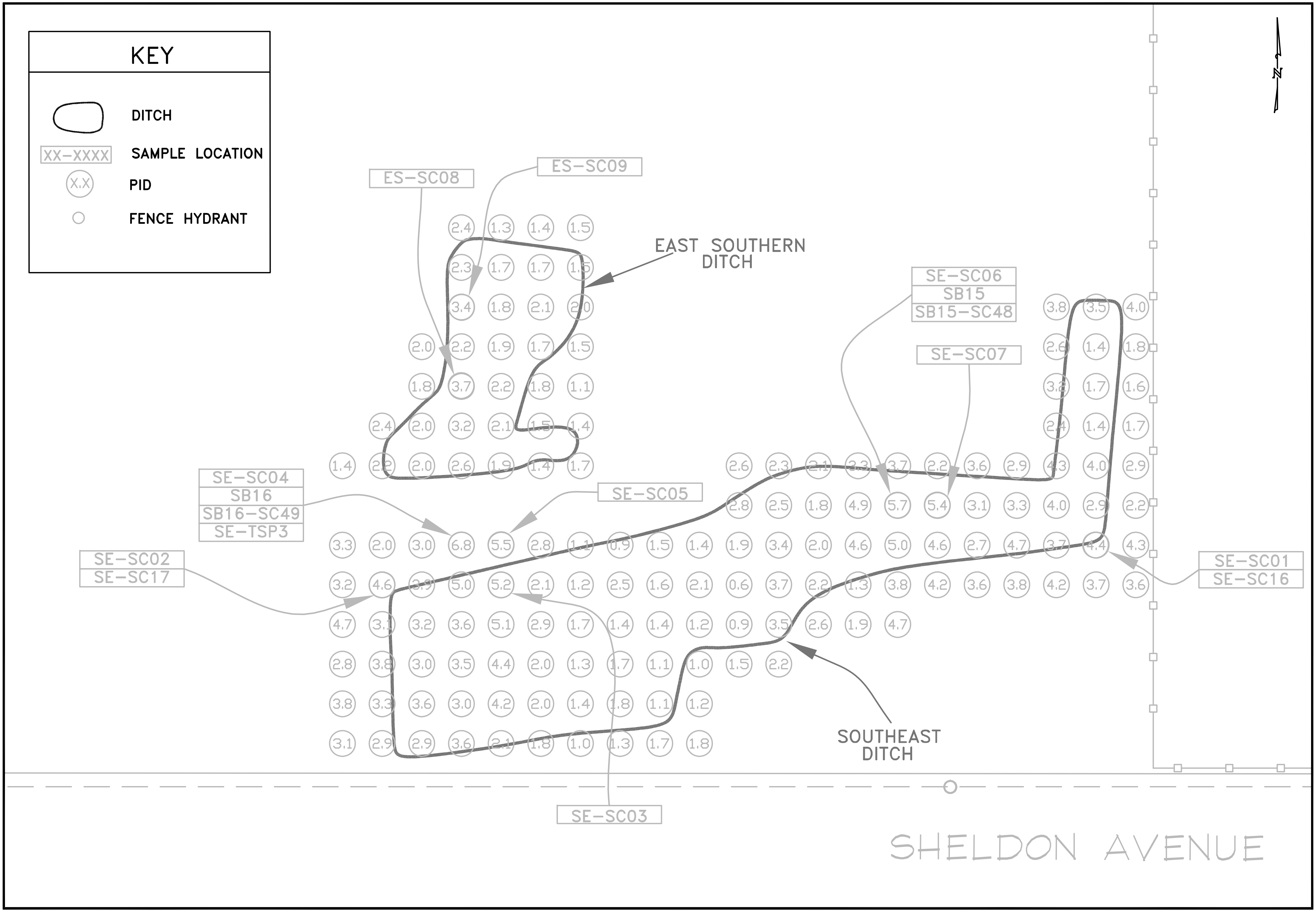
Field Screening and Lab. Sample Locations
Northeast & East Northearn Ditches
NAPA Van Horn Road Site Characterization, Fairbanks, AK.

DATE: 01/18/13	SCALE: 1" = 40'
DESIGN: PLB	PROJECT: 11-1042
DRAWN: PEF	DWG: 111042J(D3)

FIGURE
D3



ENVIRONMENTAL ENGINEERING HEALTH & SAFETY
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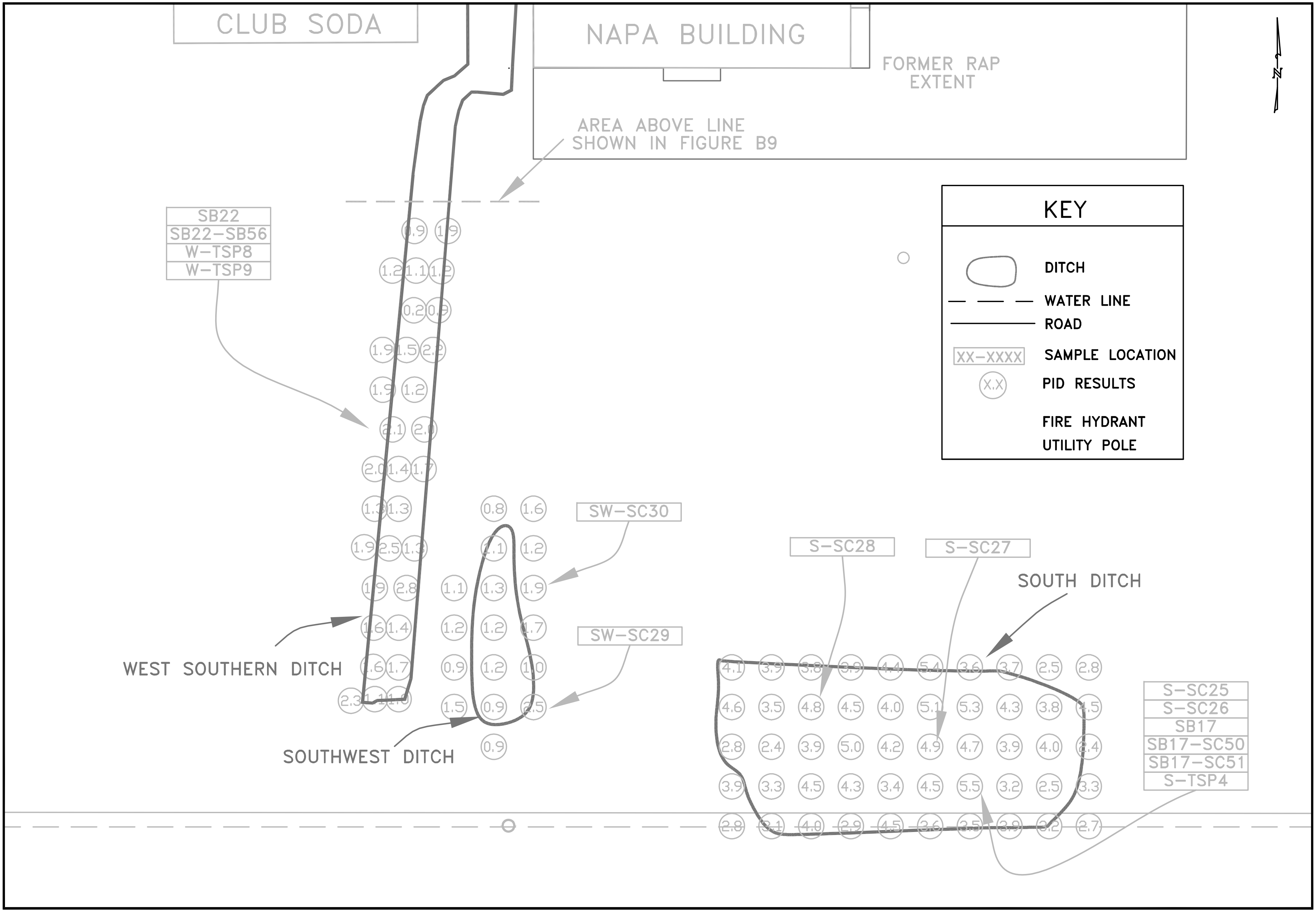
Field Screening and Lab. Sample Locations
East Southern and Southeast Ditches
NAPA Van Horn Road Site Characterization, Fairbanks, AK.

DATE: 01/18/13	SCALE: 1" = 40'
DESIGN: PLB	PROJECT: 11-1042
DRAWN: PEF	DWG: 111042J(D4)

FIGURE D4



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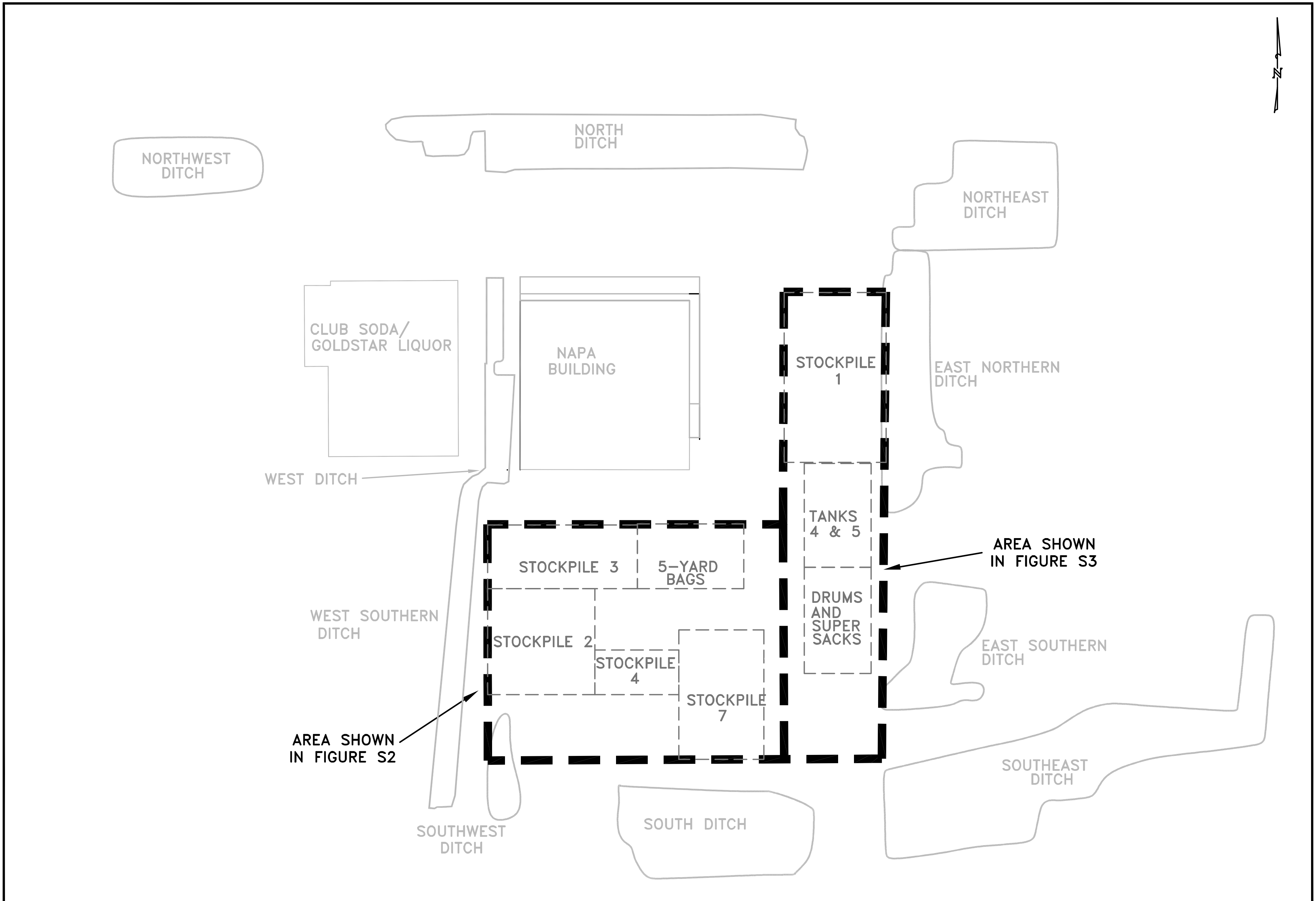

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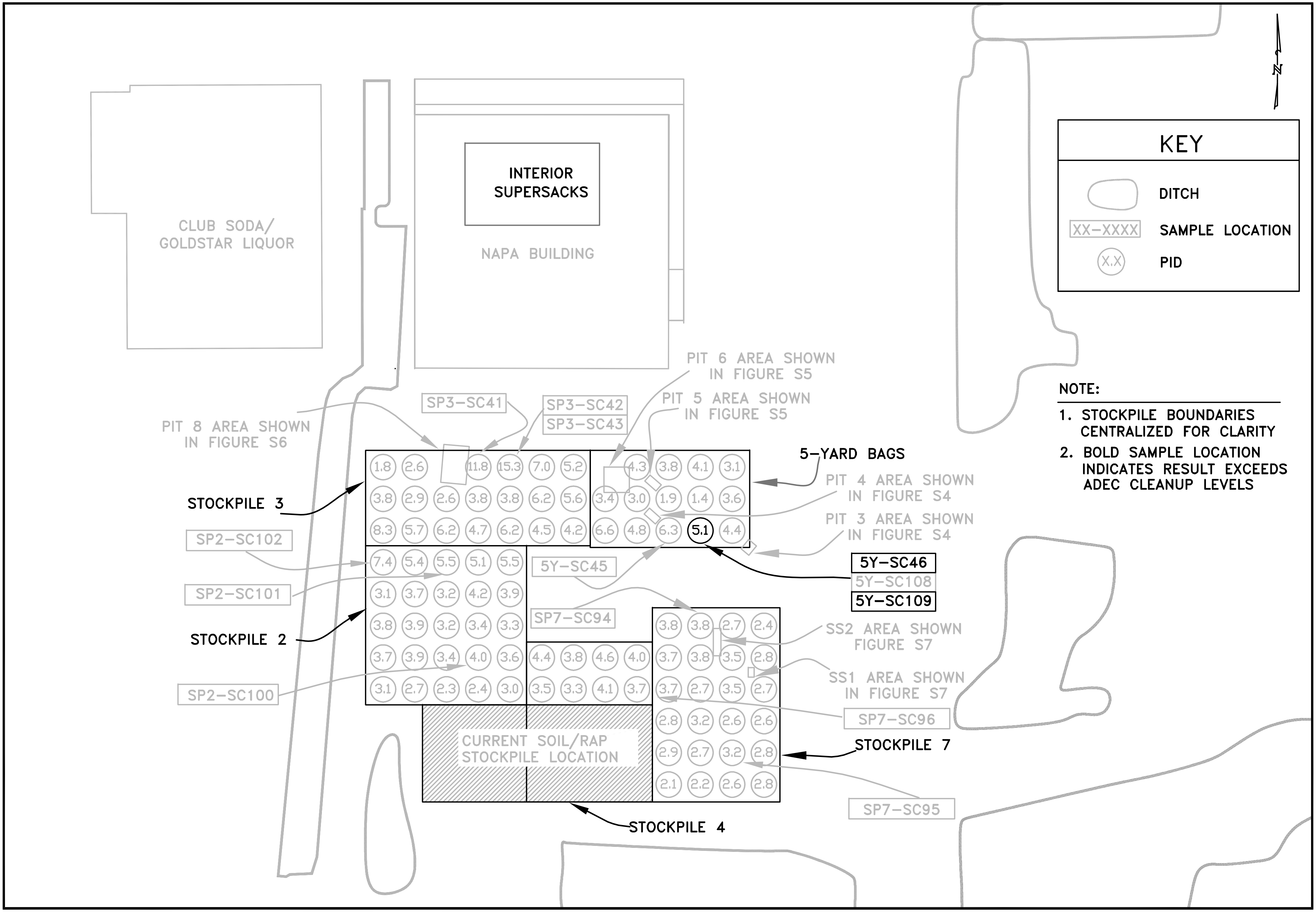
Waste Storage Areas - Site Diagram
NAPA Van Horn Road Site Characterization
Fairbanks, Alaska

DATE: 01/18/13	SCALE: 1" = 75'	FIGURE S1
DESIGN: PLB	PROJECT: 11-1042	
DRAWN: PEF	DWG: 111042J(S1)	



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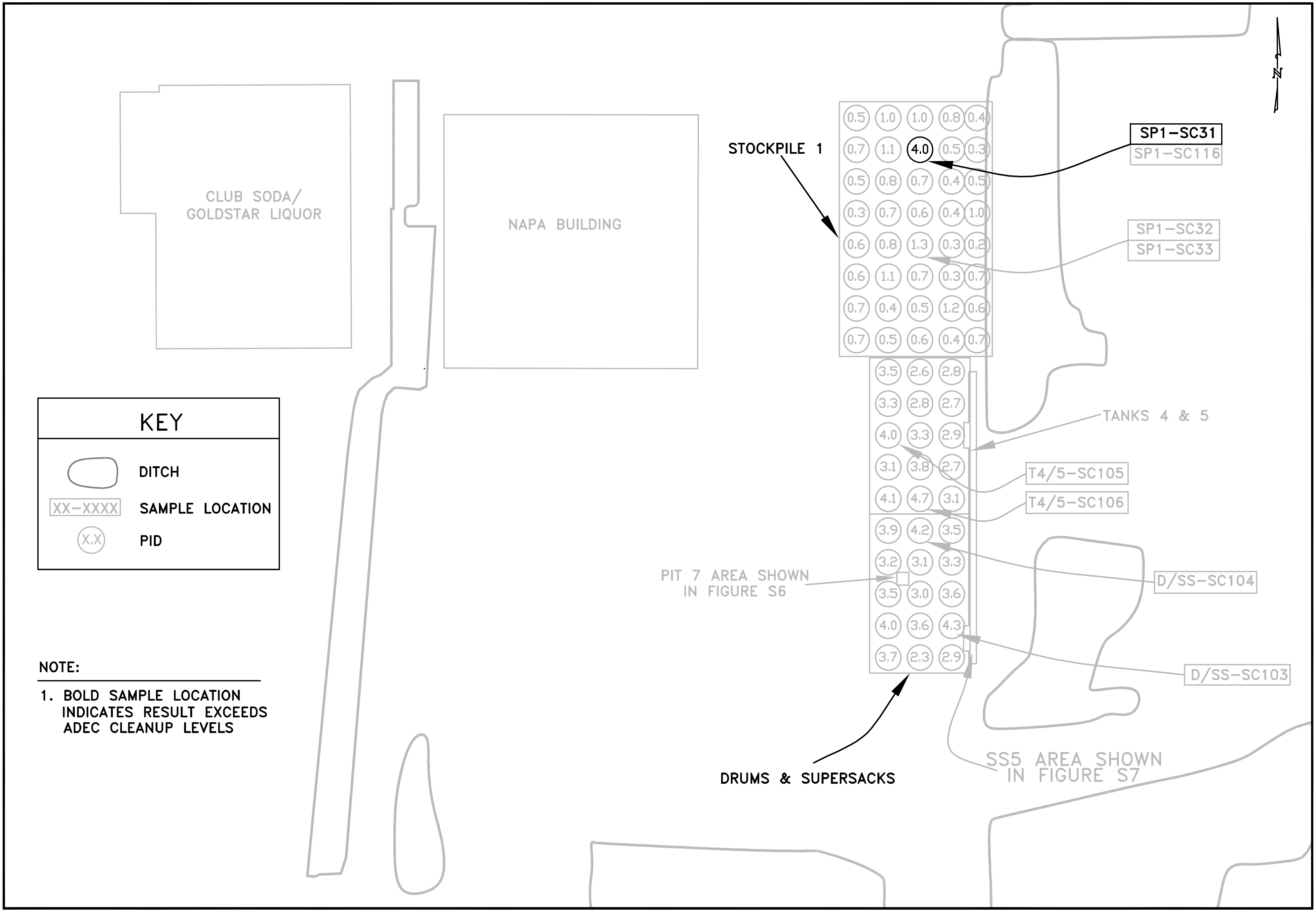
SP2, SP3, SP4, SP7, & 5Y Bags
Field Screening and Lab Sample Locations
NAPA Van Horn Road Site Characterization, Fairbanks, AK.

DATE: 01/18/13	SCALE: 1" = 50'
DESIGN: PLB	PROJECT: 11-1042
DRAWN: PEF	DWG: 111042J(S2)

FIGURE S2



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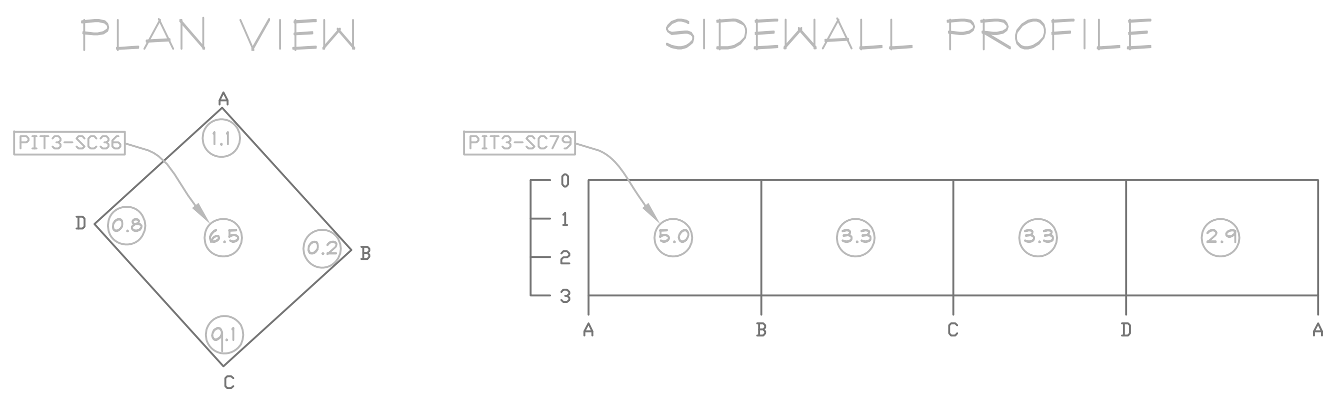
SP1 & D/SS
Field Screening and Lab Sample Locations
NAPA Van Horn Road Site Characterization, Fairbanks, AK.

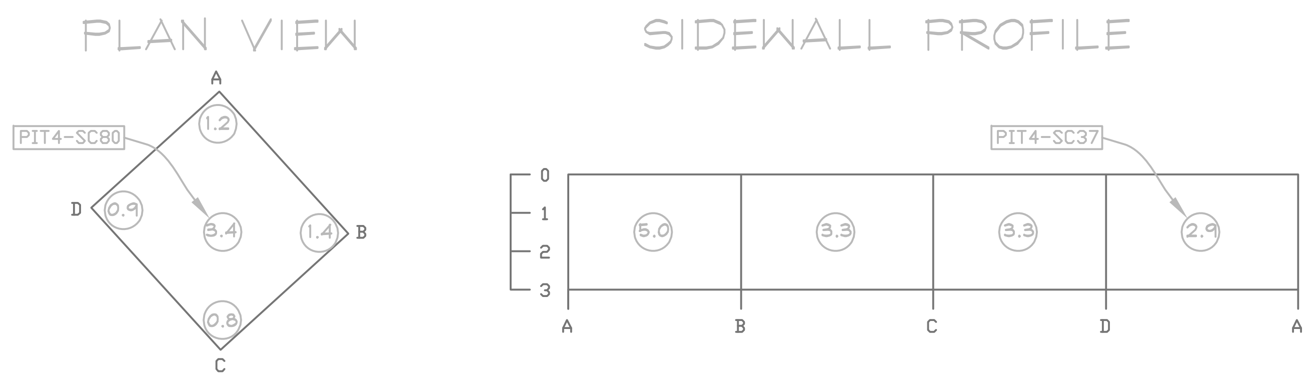
DATE: 01/18/13	SCALE: 1" = 50'
DESIGN: PLB	PROJECT: 11-1042
DRAWN: PEF	DWG: 111042J(S3)

FIGURE
S3

PIT 3



PIT 4



KEY

XX-XXXX	SAMPLE LOCATION
X.X	PID

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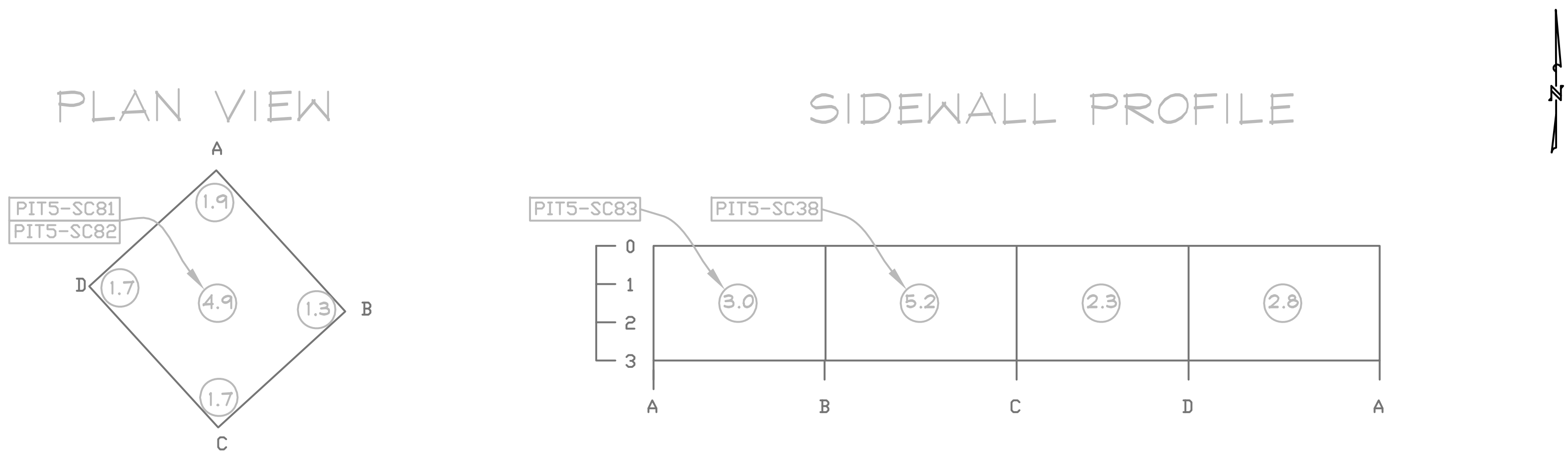
Pits 3 and 4
NAPA Van Horn Road Site Characterization
Fairbanks, Alaska

DATE: 01/18/13	SCALE: 1" = 5'	FIGURE S4
DESIGN: PLB	PROJECT: 11-1042	
DRAWN: PEF	DWG: 111042p(S4)	

PIT 5



KEY	
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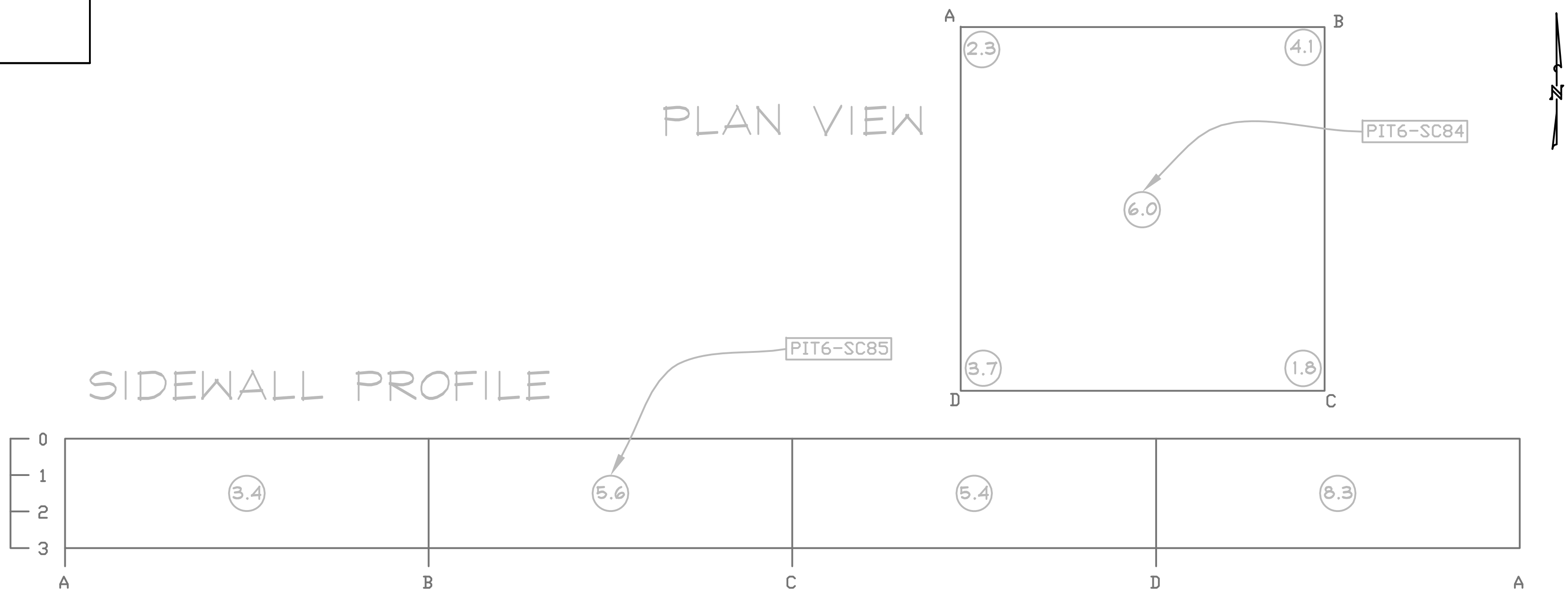
X.X	PID

PIT 6



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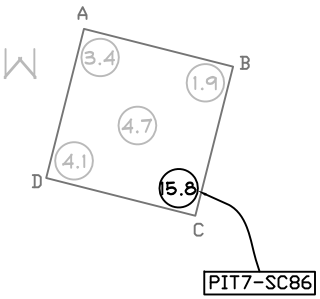
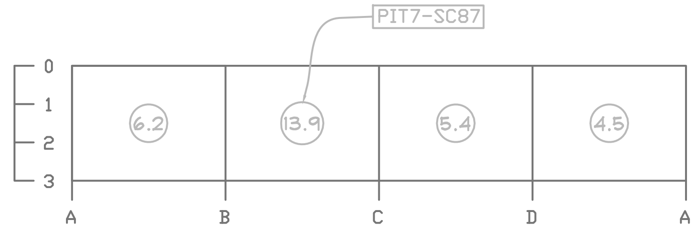
PIT 7

PLAN VIEW





SIDEWALL PROFILE

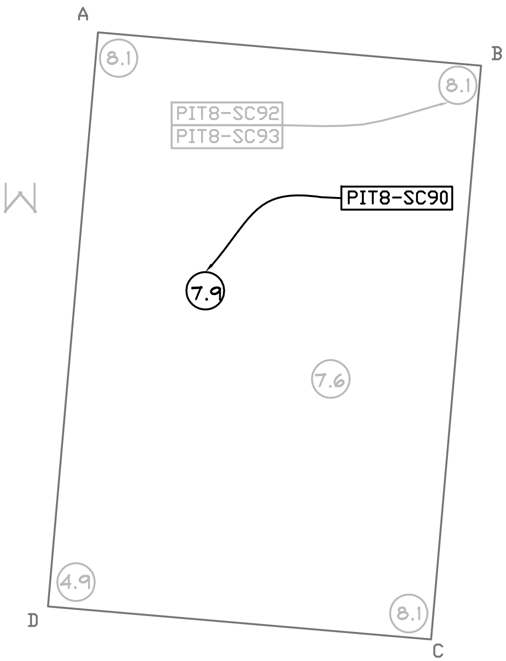
KEY	
XX-XXXX	SAMPLE LOCATION
X.X	PID

NOTE:

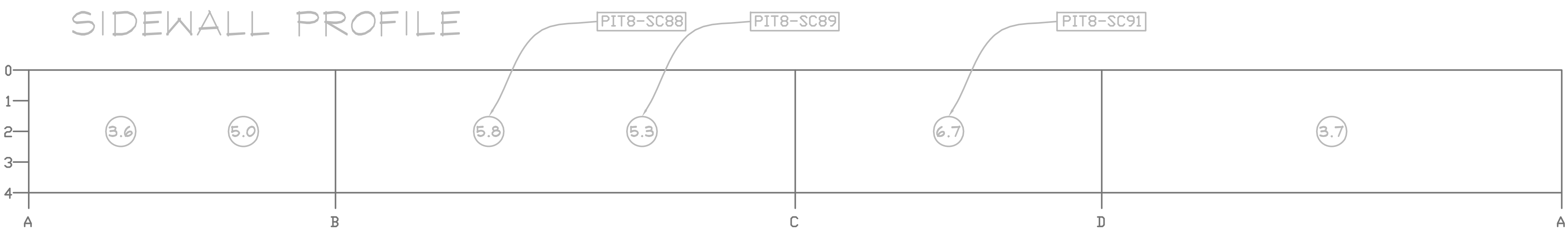
1. BOLD SAMPLE LOCATION INDICATES RESULT EXCEEDS ADEC CLEANUP LEVELS

PIT 8

PLAN VIEW



SIDEWALL PROFILE



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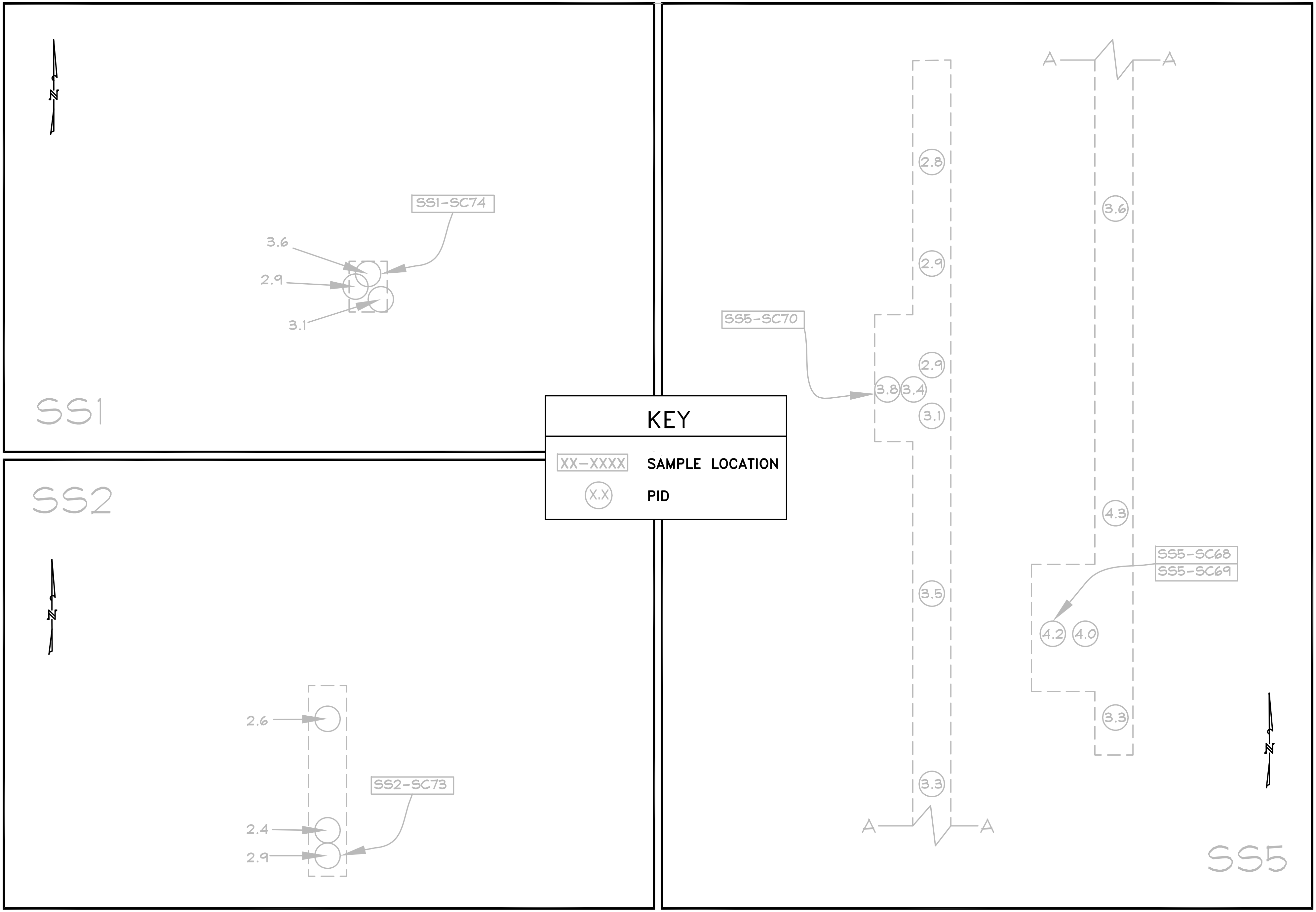
Pits 7 and 8
NAPA Van Horn Road Site Characterization
Fairbanks, Alaska

DATE: 01/18/13	SCALE: 1" = 5'	FIGURE
DESIGN: PLB	PROJECT: 11-1042	S6
DRAWN: PEF	DWG: 111042p(S6)	



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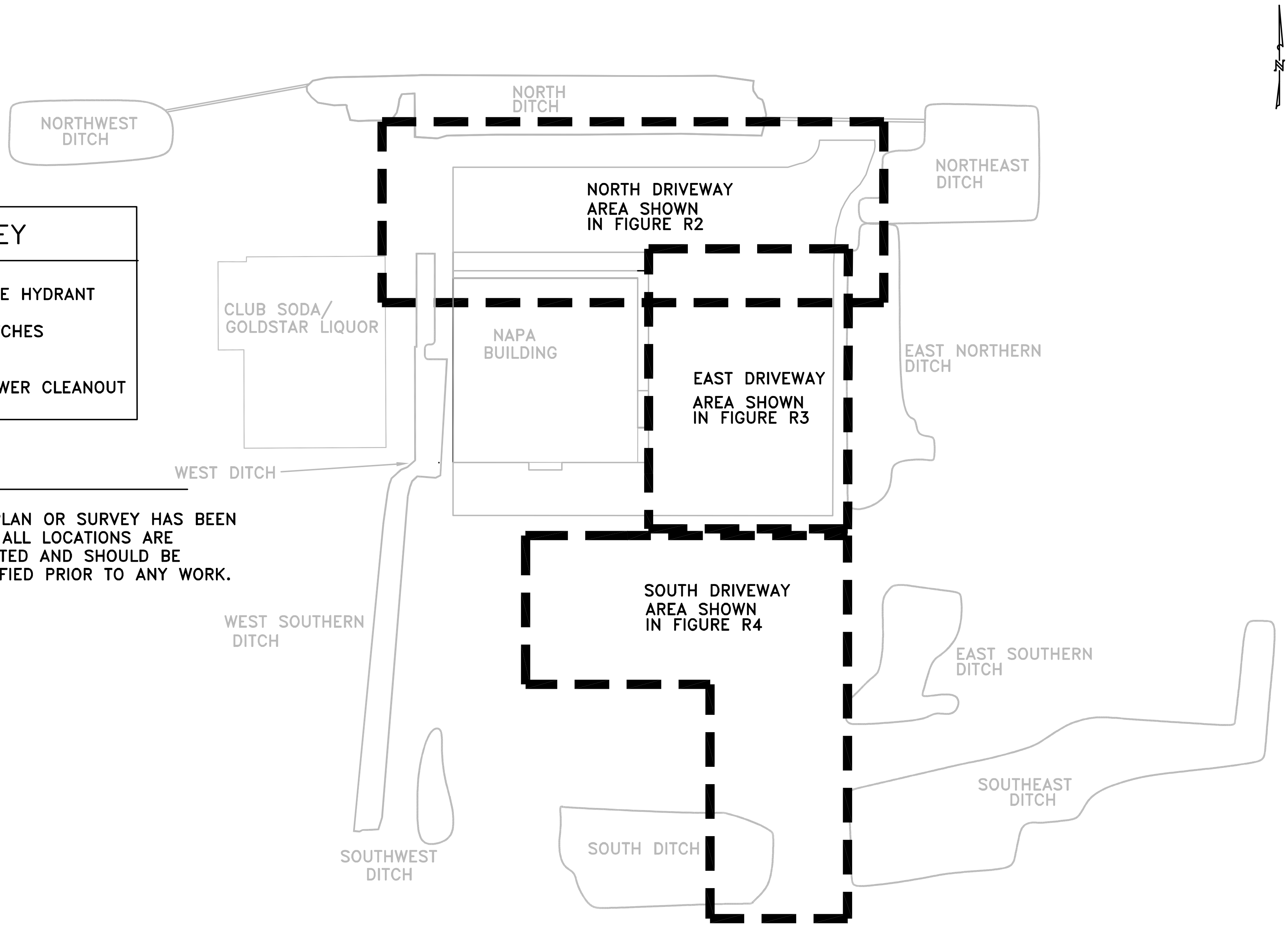
KEY

- o FIRE HYDRANT
- DITCHES
- SEWER CLEANOUT



NOTE:

NO PLOT PLAN OR SURVEY HAS BEEN PROVIDED, ALL LOCATIONS ARE APPROXIMATED AND SHOULD BE FIELD-VERIFIED PRIOR TO ANY WORK.

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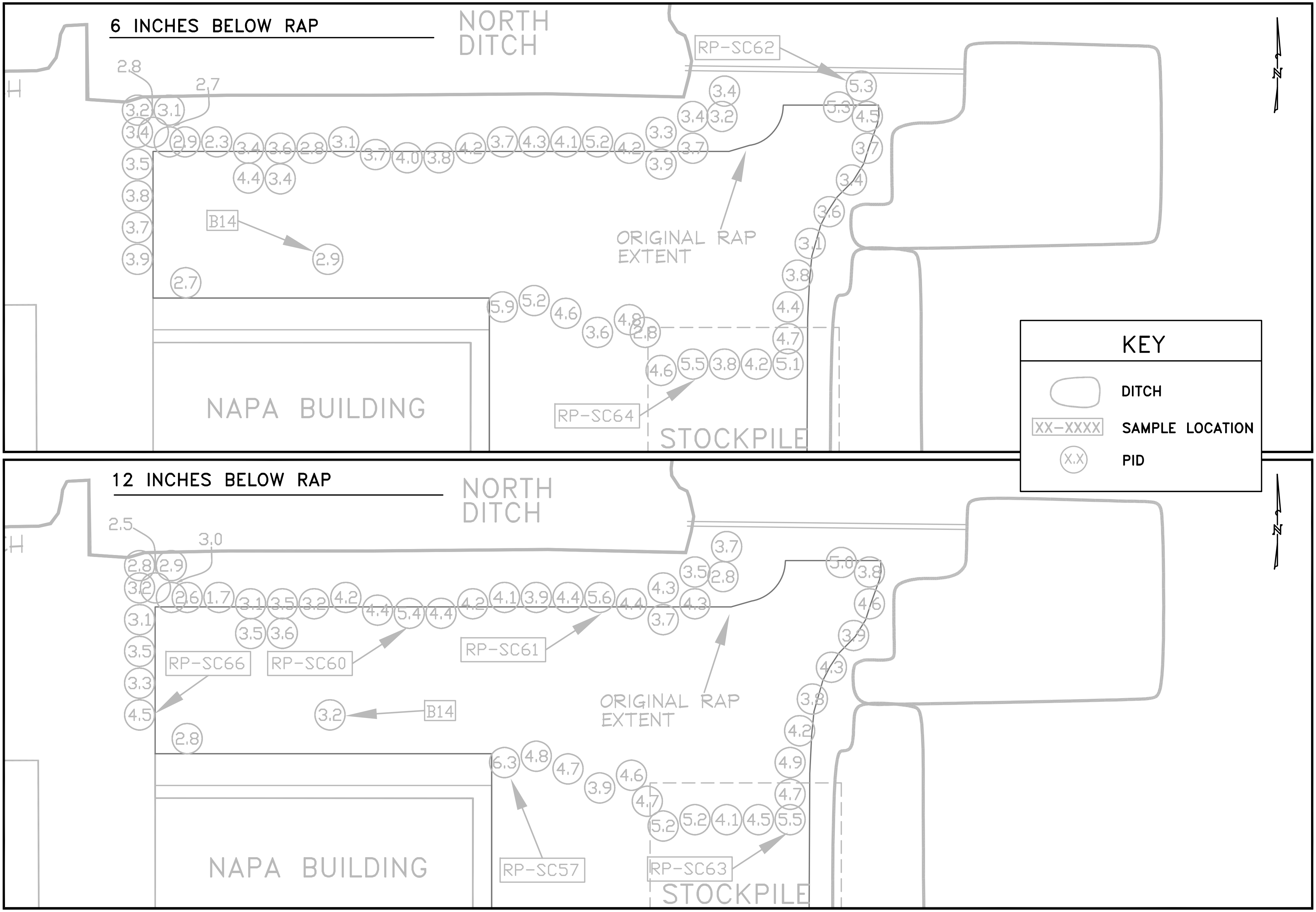
Driveways - Site Diagram
NAPA Van Horn Road Site Characterization
Fairbanks, Alaska

DATE: 01/18/13	SCALE: 1" = 75'
DESIGN: PLB	PROJECT: 11-1042
DRAWN: PEF	DWG: 111042J(R1)

FIGURE R1



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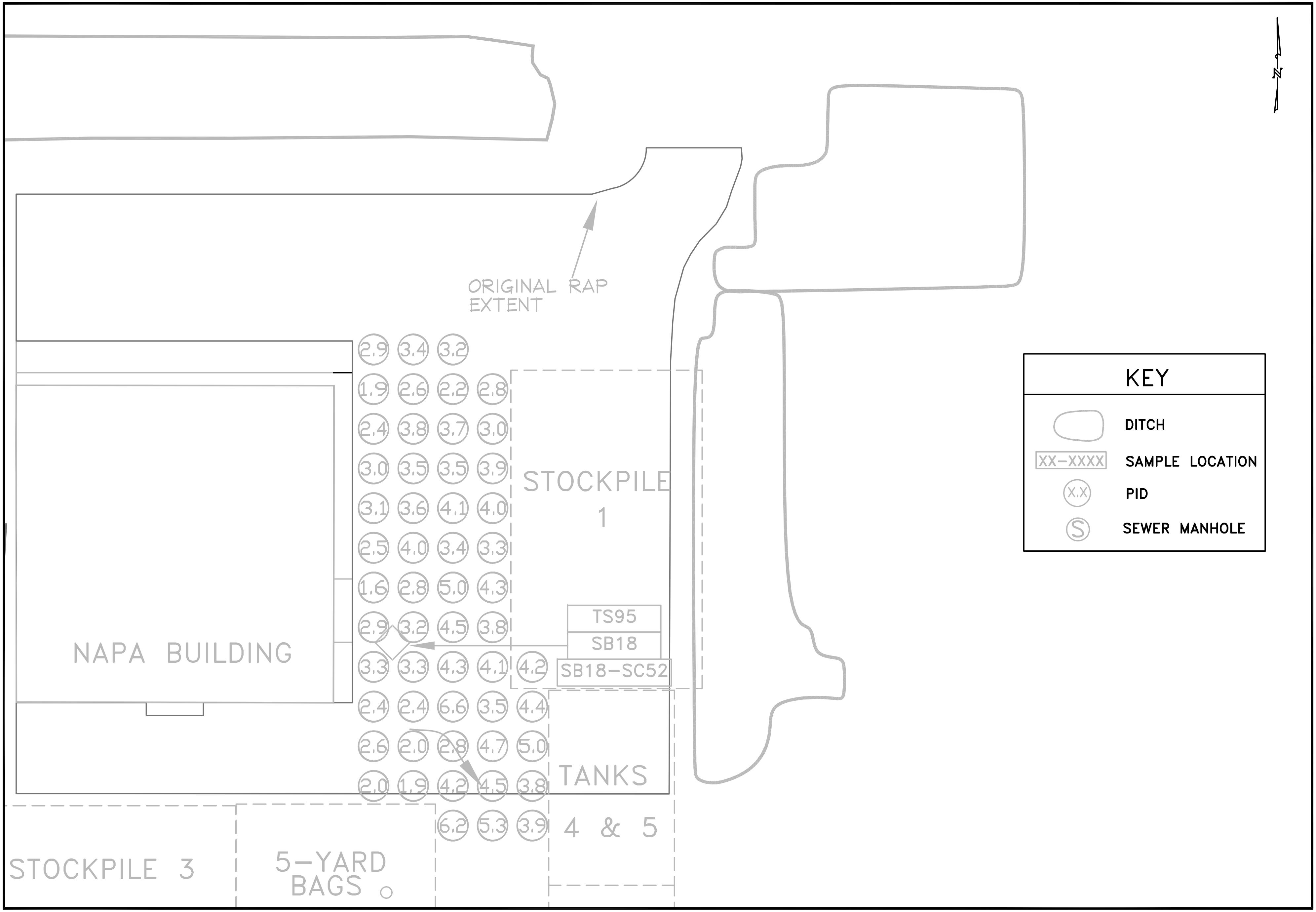
North Driveway Field Screening & Lab. Sample Locations
NAPA Van Horn Road Site Characterization
Fairbanks, Alaska

DATE: 01/18/13	SCALE: 1" = 40'
DESIGN: PLB	PROJECT: 11-1042
DRAWN: PEF	DWG: 111042J(R2)

FIGURE
R2



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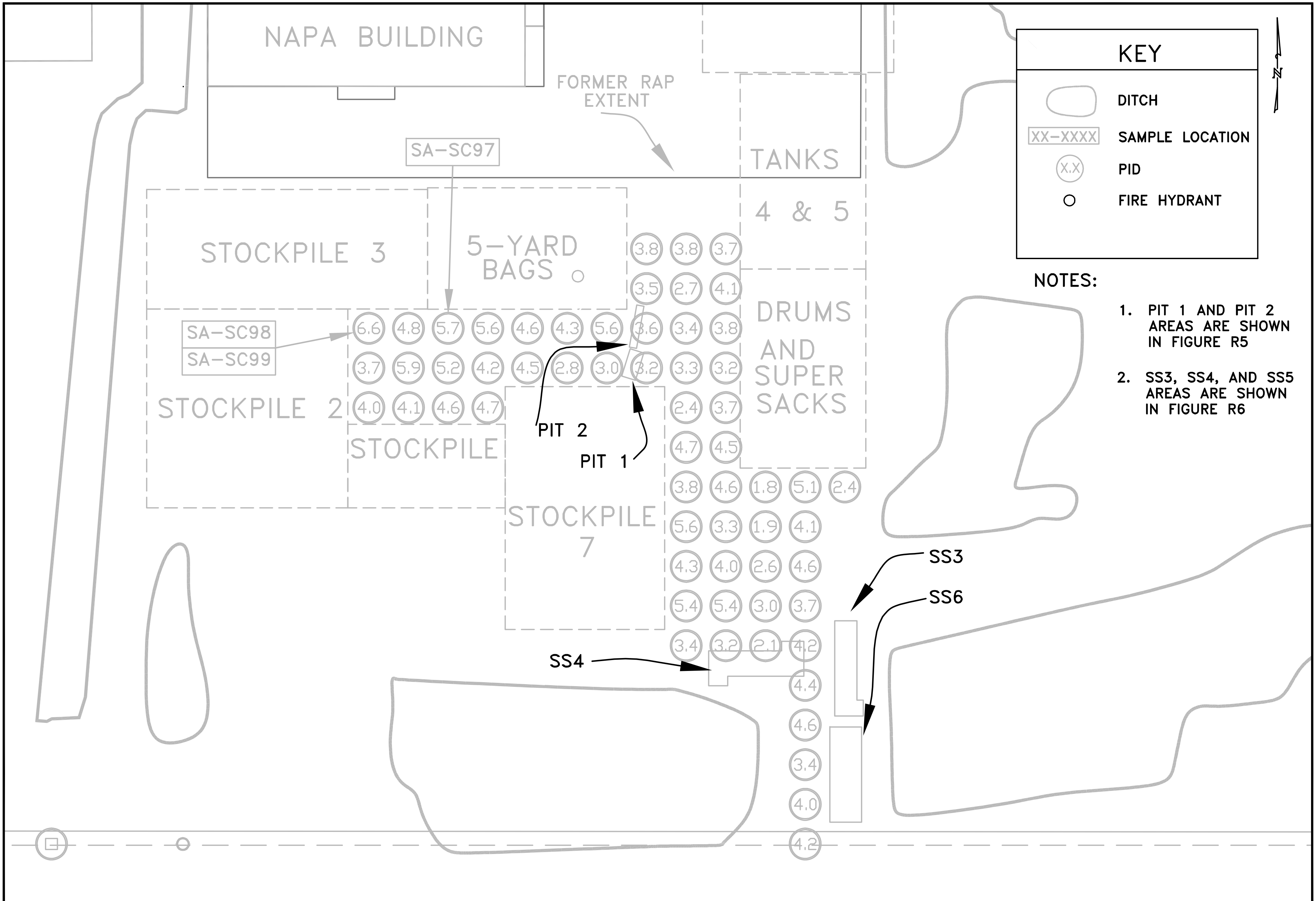
East Driveway Field Screening & Lab. Sample Locations
NAPA Van Horn Road Site Characterization
Fairbanks, Alaska

DATE: 01/18/13	SCALE: 1" = 40'
DESIGN: PLB	PROJECT: 11-1042
DRAWN: PEF	DWG: 111042J(R3)

FIGURE R3



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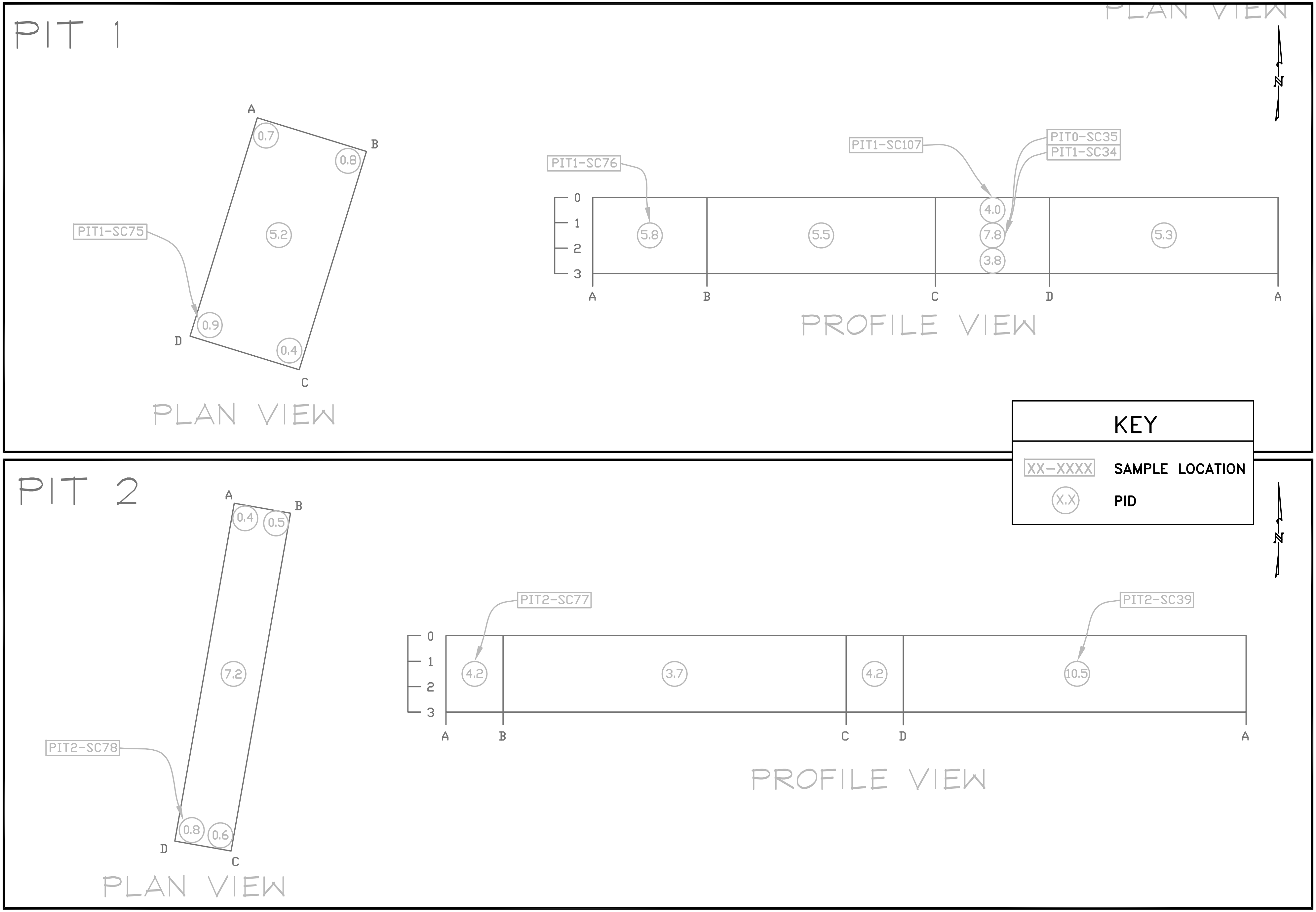
South Driveway Field Screening & Lab. Sample Locations
NAPA Van Horn Road Site Characterization
Fairbanks, Alaska

DATE: 01/18/13	SCALE: 1" = 40'
DESIGN: PLB	PROJECT: 11-1042
DRAWN: PEF	DWG: 111042p(R4)

FIGURE R4



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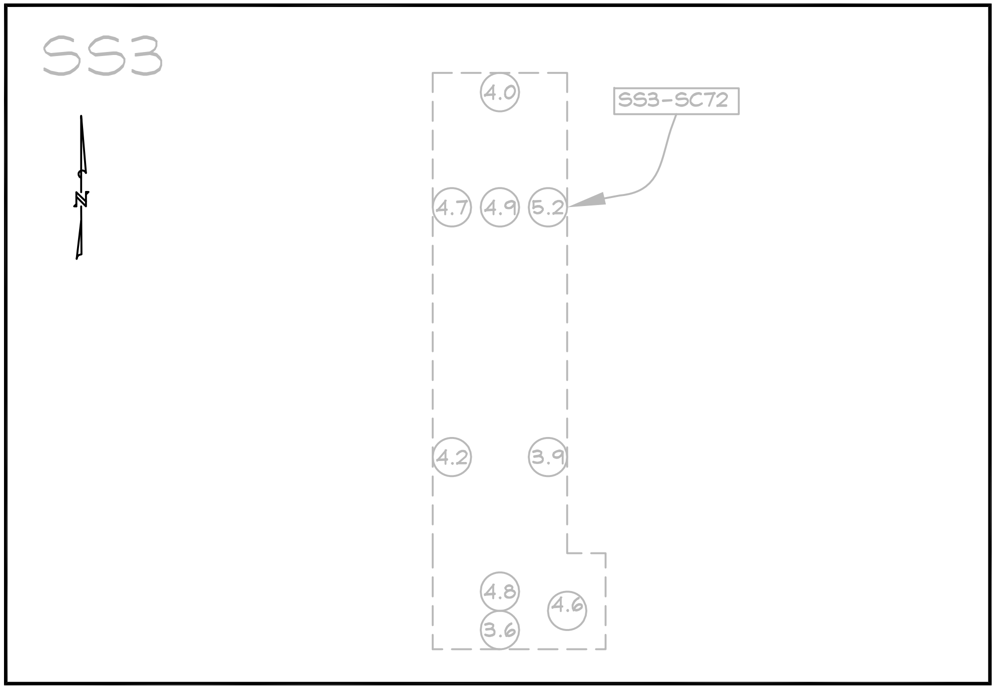
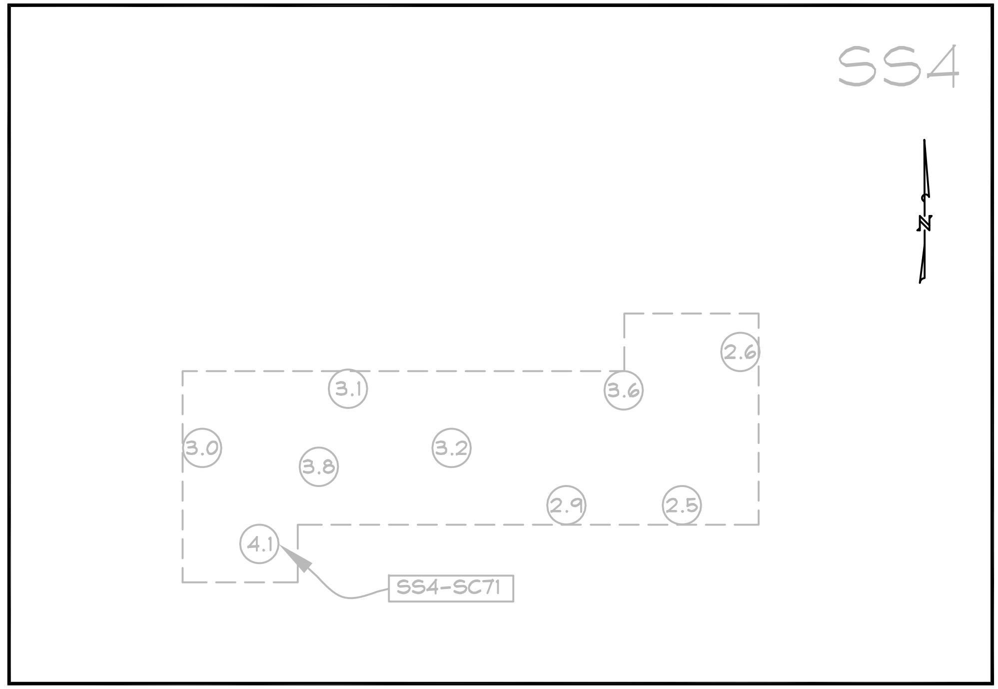
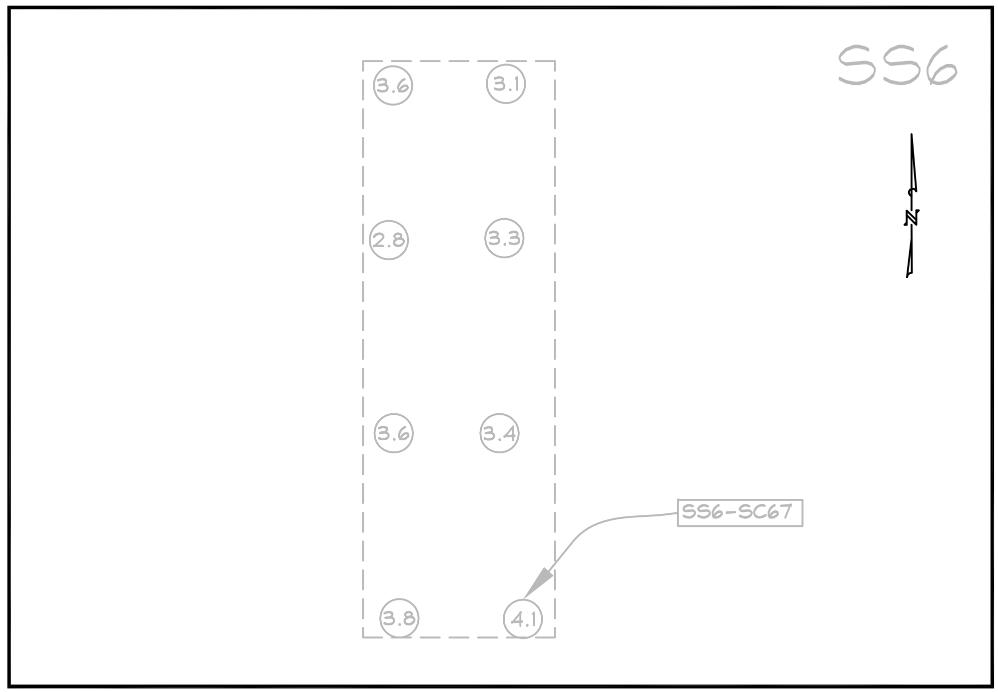
Pits 1 and 2
NAPA Van Horn Road Site Characterization
Fairbanks, Alaska

DATE: 01/18/13	SCALE: 1" = 5'
DESIGN: PLB	PROJECT: 11-1042
DRAWN: PEF	DWG: 111042p(R5)

FIGURE R5







KEY

XX-XXXX	SAMPLE LOCATION
X.X	PID

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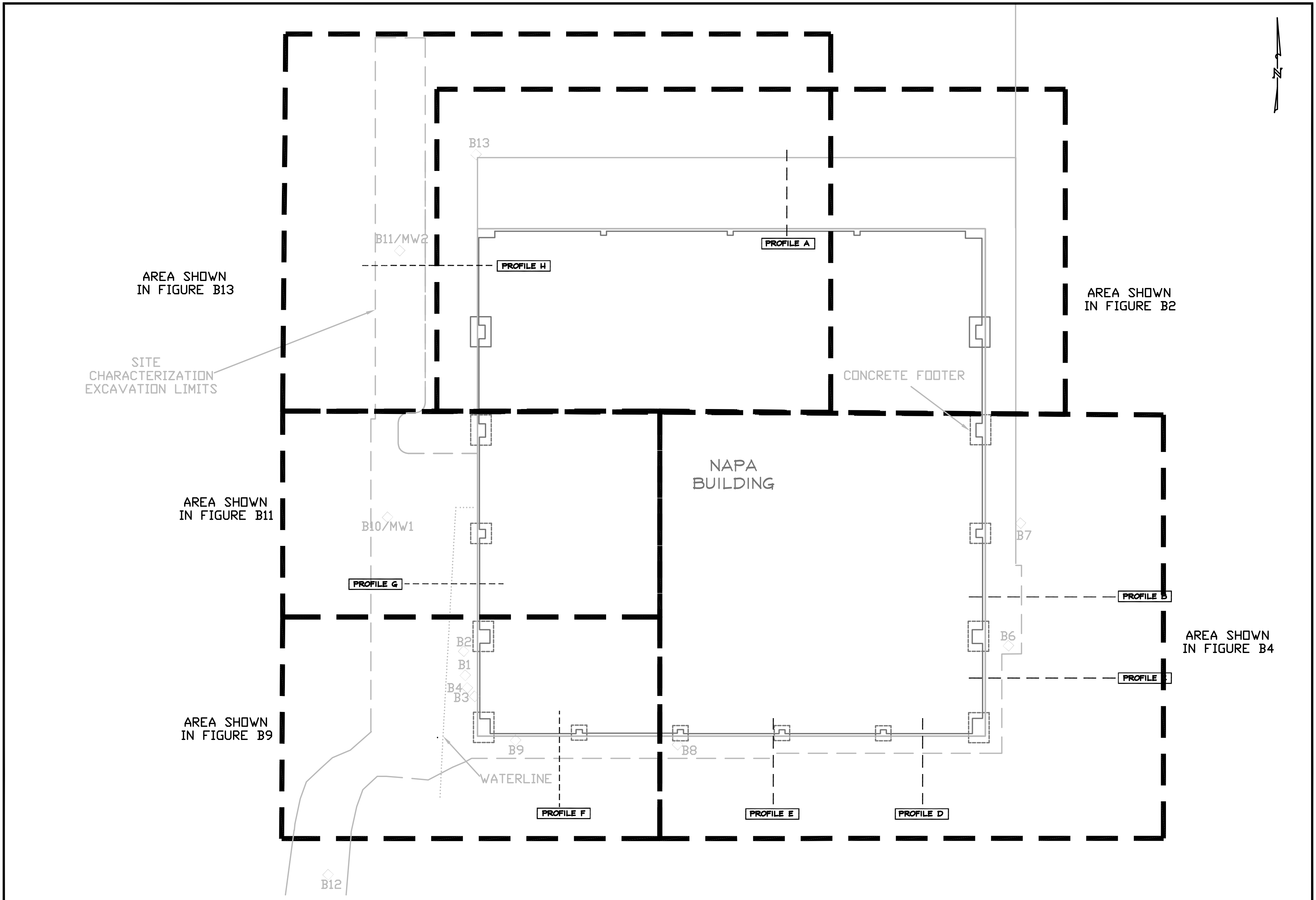
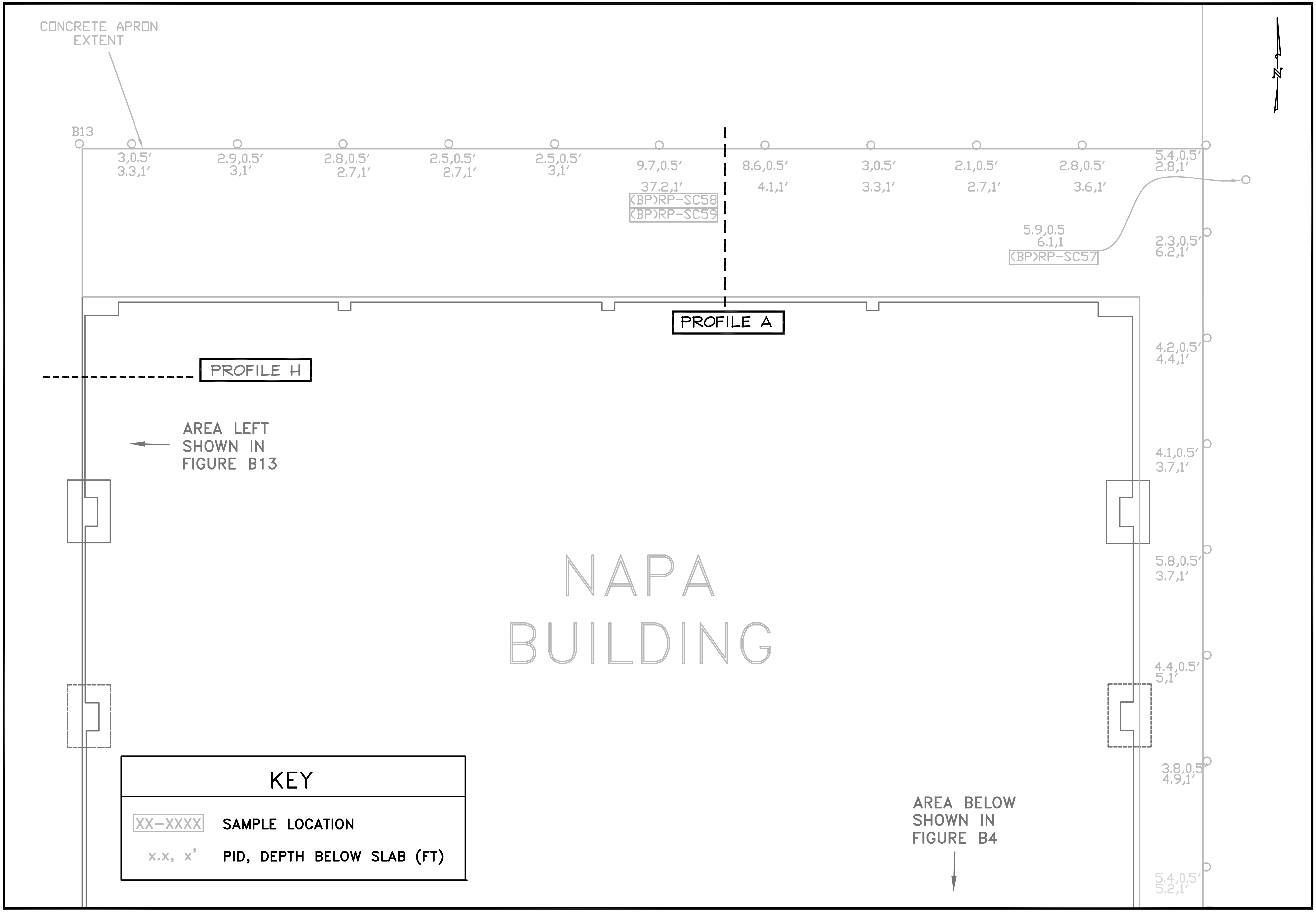
Surface Stains SS3, SS4 & SS6
NAPA Van Horn Road Site Characterization
Fairbanks, Alaska

DATE: 01/18/13	SCALE: 1" = 10'	FIGURE R6
DESIGN: PLB	PROJECT: 11-1042	
DRAWN: PEF	DWG: 111042p(R6)	



NORTECH ENVIRONMENTAL ENGINEERING HEALTH & SAFETY 2400 College Road, Fbks., Alaska 99709 Ph: 907-452-5688 3105 Lakeshore Dr. Anch, Alaska 99517 Ph: 907-222-2445 5438 Shaune Dr, Suite B, Jnu., Alaska 99801 Ph: 907-586-6813	Building Perimeter and West Ditch - Site Diagram NAPA Van Horn Road Site Characterization Fairbanks, AK.	DATE: 01/18/13 DESIGN: PLB DRAWN: PEF	SCALE: 1" = 25' PROJECT: 11-1042 DWG: 111042J(B1)	FIGURE B1



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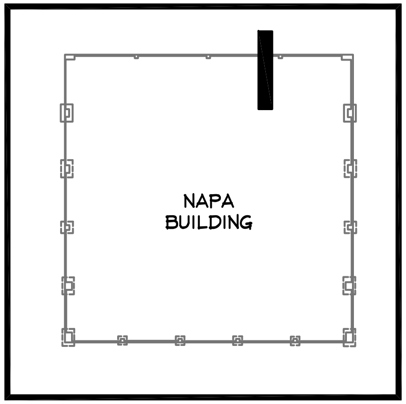
Field Screening and Lab Sample Locations
North Building Perimeter
NAPA Van Horn Road Site Characterization, Fairbanks, AK.

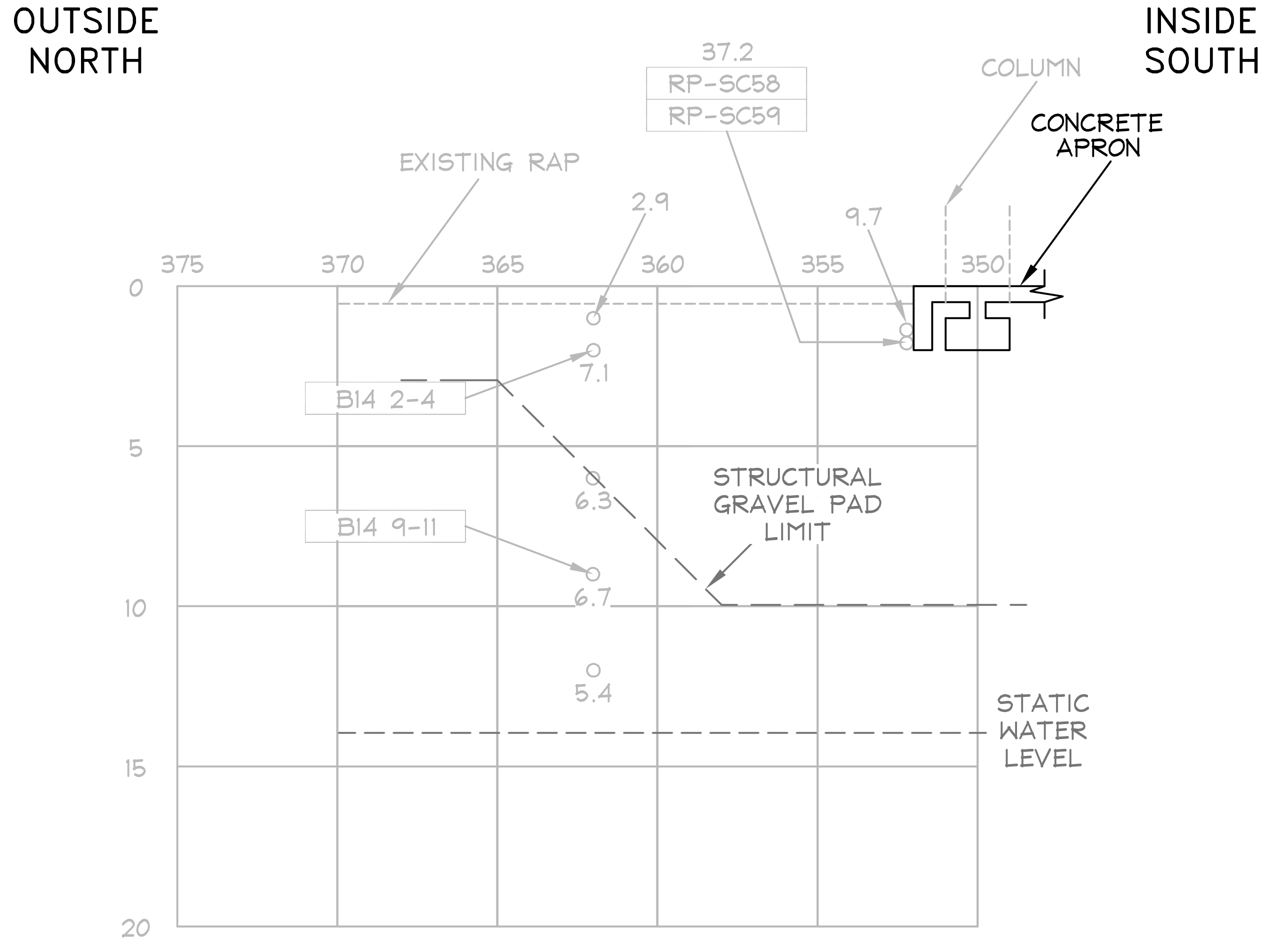
DATE: 01/18/13	SCALE: 1" = 12'
DESIGN: PLB	PROJECT: 11-1042
DRAWN: PEF	DWG: 111042J(B2)

FIGURE B2



KEY

XX-XXXX	SAMPLE LOCATION
X.X	PID



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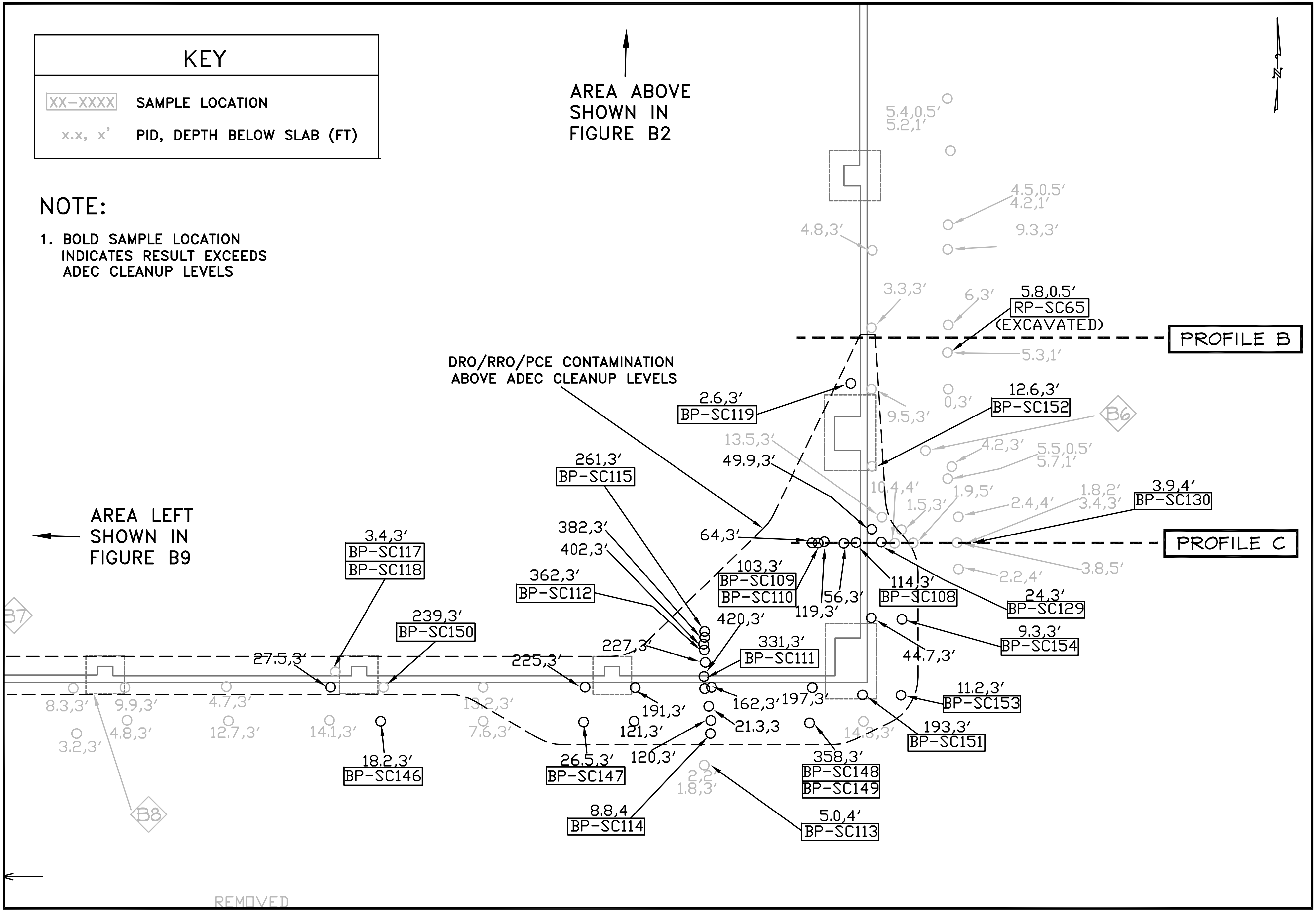
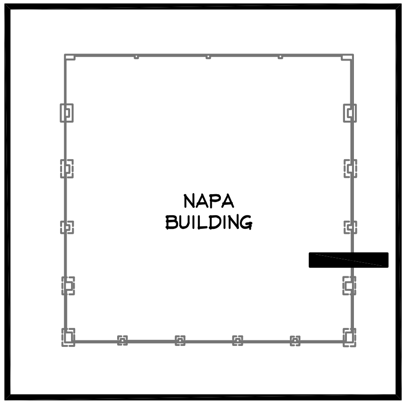
Northern Building - Profile A
NAPA Van Horn Road Site Characterization
Fairbanks, Alaska

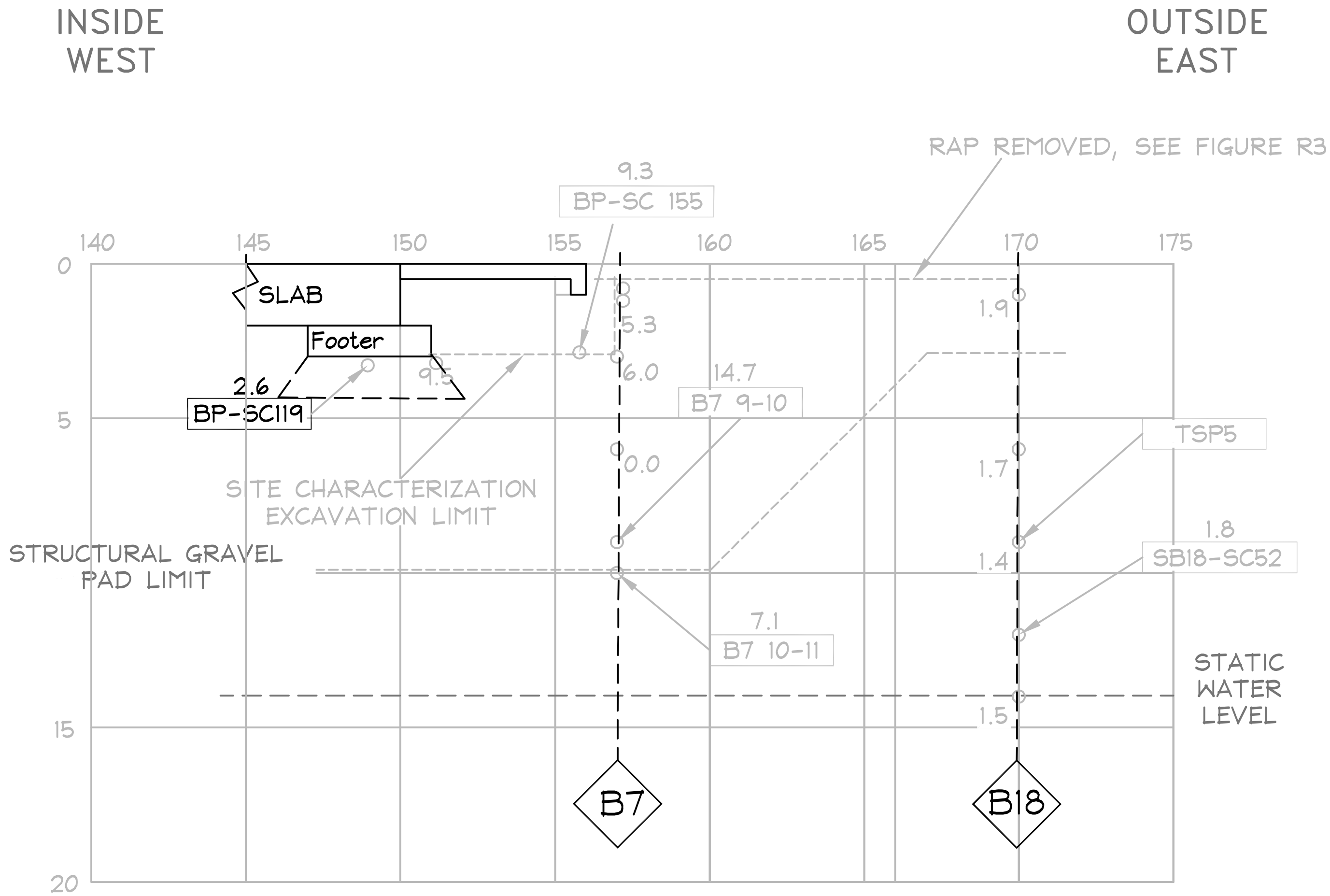
DATE: 01/18/13	SCALE: 1" = 6'
DESIGN: PLB	PROJECT: 11-1042
DRAWN: PEF	DWG: 111042J(B3)

FIGURE
B3



ENVIRONMENTAL ENGINEERING HEALTH & SAFETY 2400 College Road, Fbks., Alaska 99709 Ph: 907-452-5688 3105 Lakeshore Dr. Anch, Alaska 99517 Ph: 907-222-2445 5438 Shaune Dr, Suite B, Jnu., Alaska 99801 Ph: 907-586-6813	Field Screening and Lab Sample Locations Southeast Building Perimeter NAPA Van Horn Road Site Characterization, Fairbanks, AK.	DATE: 01/18/13 DESIGN: PLB DRAWN: PEF	SCALE: 1" = 10' PROJECT: 11-1042 DWG: 111042J(B4)	FIGURE B4





KEY

XX-XXXX	SAMPLE LOCATION
X.X	PID

NOTE:

1. BOLD SAMPLE LOCATION INDICATES RESULT EXCEEDS ADEC CLEANUP LEVELS

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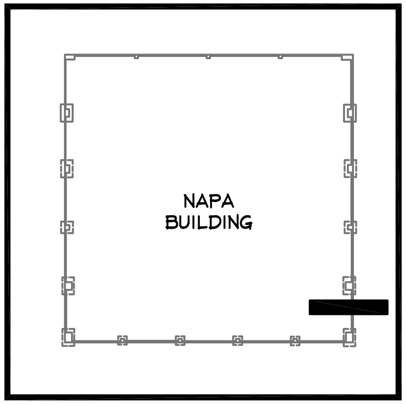
Eastern Building Perimeter - Profile B
NAPA Van Horn Road Site Characterization
Fairbanks, Alaska

DATE: 01/18/13	SCALE: 1" = 6'	FIGURE
DESIGN: PLB	PROJECT: 11-1042	B5
DRAWN: PEF	DWG: 111042J(B5)	

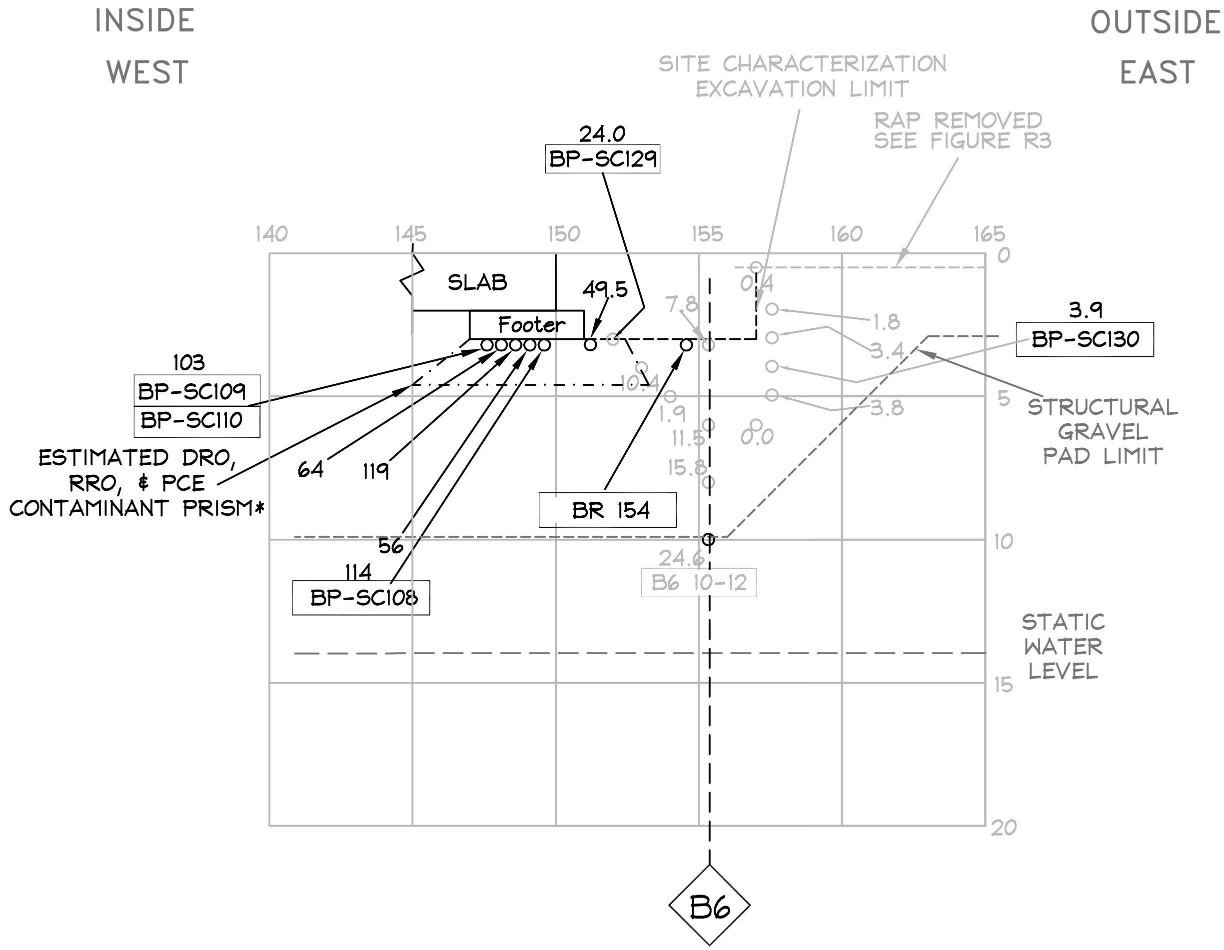


KEY

XX–XXXX	SAMPLE LOCATION
X.X	PID

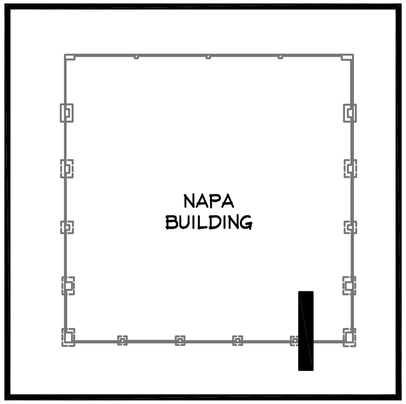
NOTE:

1. *BENZENE, ETHYLBENZENE, AND TRICHLOROETHENE IDENTIFIED ABOVE ADEC CLEANUP LEVELS AT SOME SAMPLE LOCATIONS
2. BOLD SAMPLE LOCATION INDICATES RESULT EXCEEDS ADEC CLEANUP LEVELS



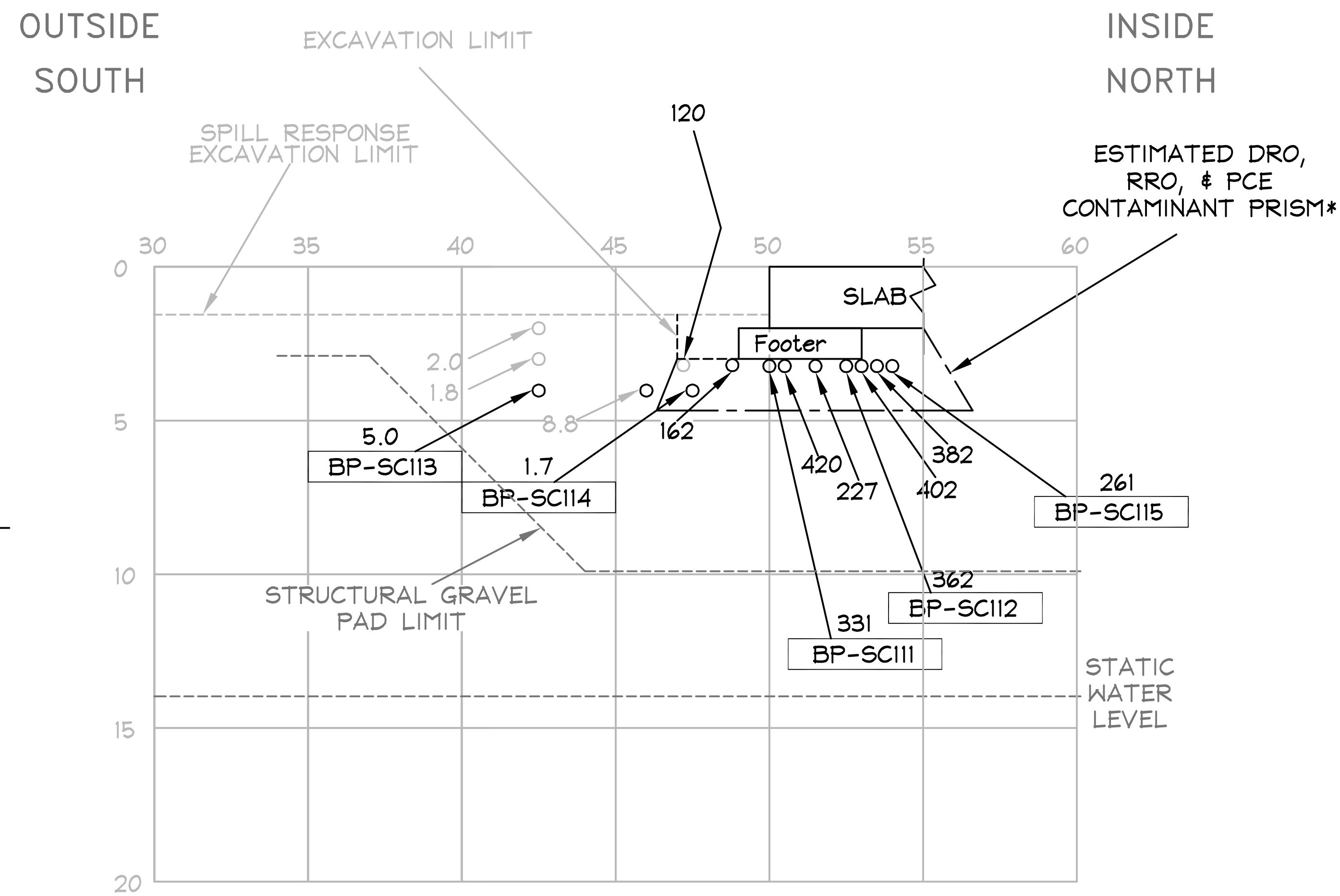
NORTECH — ENVIRONMENTAL ENGINEERING HEALTH & SAFETY 2400 College Road, Fbks., Alaska 99709 Ph: 907-452-5688 3105 Lakeshore Dr. Anch, Alaska 99517 Ph: 907-222-2445 5438 Shaune Dr, Suite B, Jnu., Alaska 99801 Ph: 907-586-6813	Southeast Building Perimeter – Profile C NAPA Van Horn Road Site Characterization Fairbanks, Alaska	DATE: 01/18/13 DESIGN: PLB DRAWN: PEF	SCALE: 1" = 6' PROJECT: 11-1042 DWG: 111042J(B6)

FIGURE B6



KEY

XX-XXXX	SAMPLE LOCATION
X.X	PID



NOTE:

1. *BENZENE, ETHYLBENZENE, AND TRICHLOROETHENE IDENTIFIED ABOVE ADEC CLEANUP LEVELS AT SOME SAMPLE LOCATIONS
2. BOLD SAMPLE LOCATION INDICATES RESULT EXCEEDS ADEC CLEANUP LEVELS

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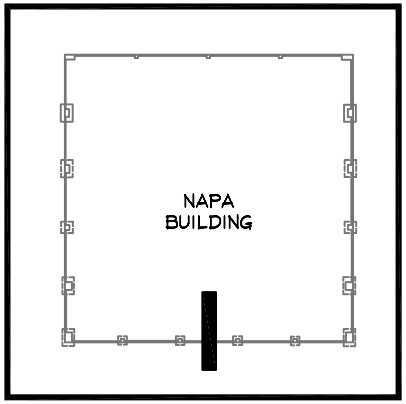
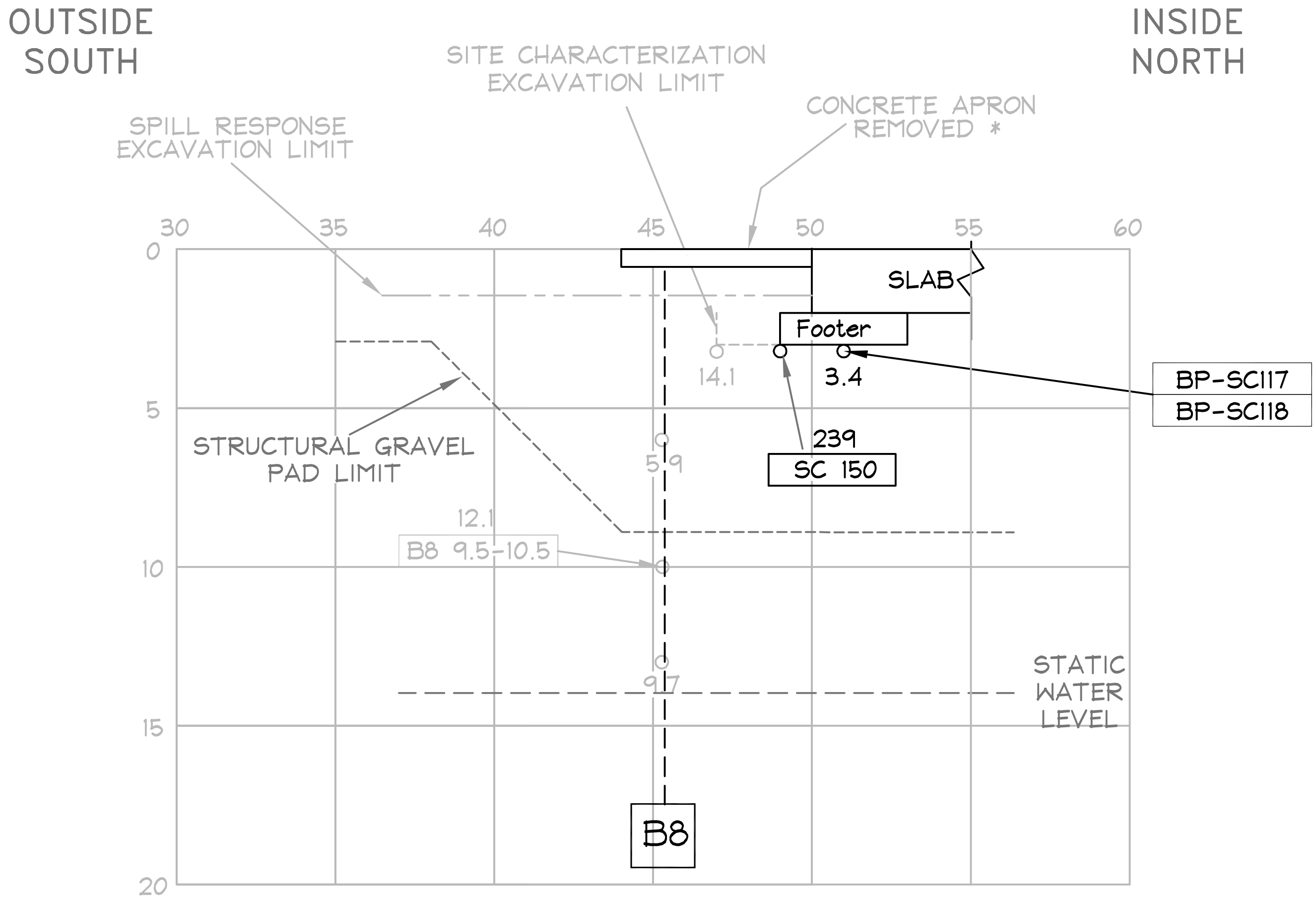
Southeast Building Perimeter - Profile D
NAPA Van Horn Road Site Characterization
Fairbanks, Alaska

DATE: 01/18/13	SCALE: 1" = 6'	FIGURE
DESIGN: PLB	PROJECT: 11-1042	B7
DRAWN: PEF	DWG: 111042J(B7)	





KEY

XX-XXXX	SAMPLE LOCATION
X.X	PID

NOTE:

1. BOLD SAMPLE LOCATION INDICATES RESULT EXCEEDS ADEC CLEANUP LEVELS

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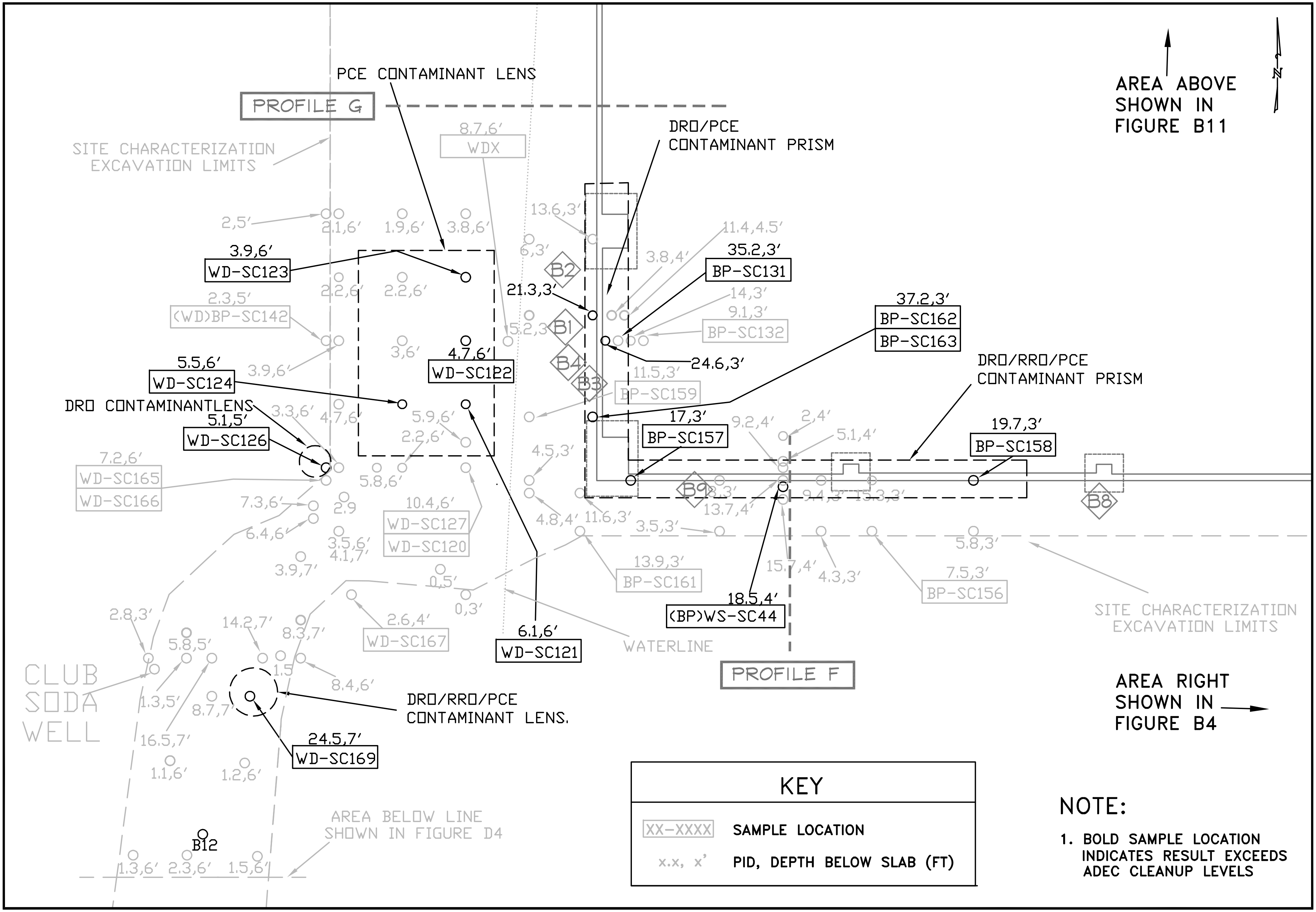
Southern Building Perimeter - Profile E
NAPA Van Horn Road Site Characterization
Fairbanks, Alaska

DATE: 01/18/13	SCALE: 1" = 6'	FIGURE B10
DESIGN: PLB	PROJECT: 11-1042	
DRAWN: PEF	DWG: 111042J(B10)	



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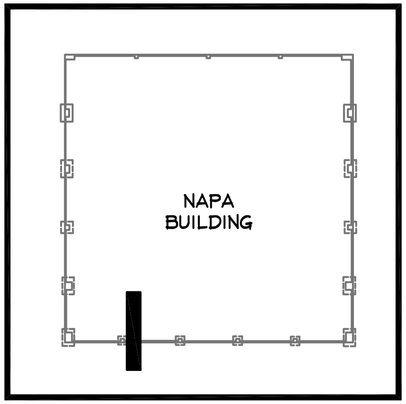
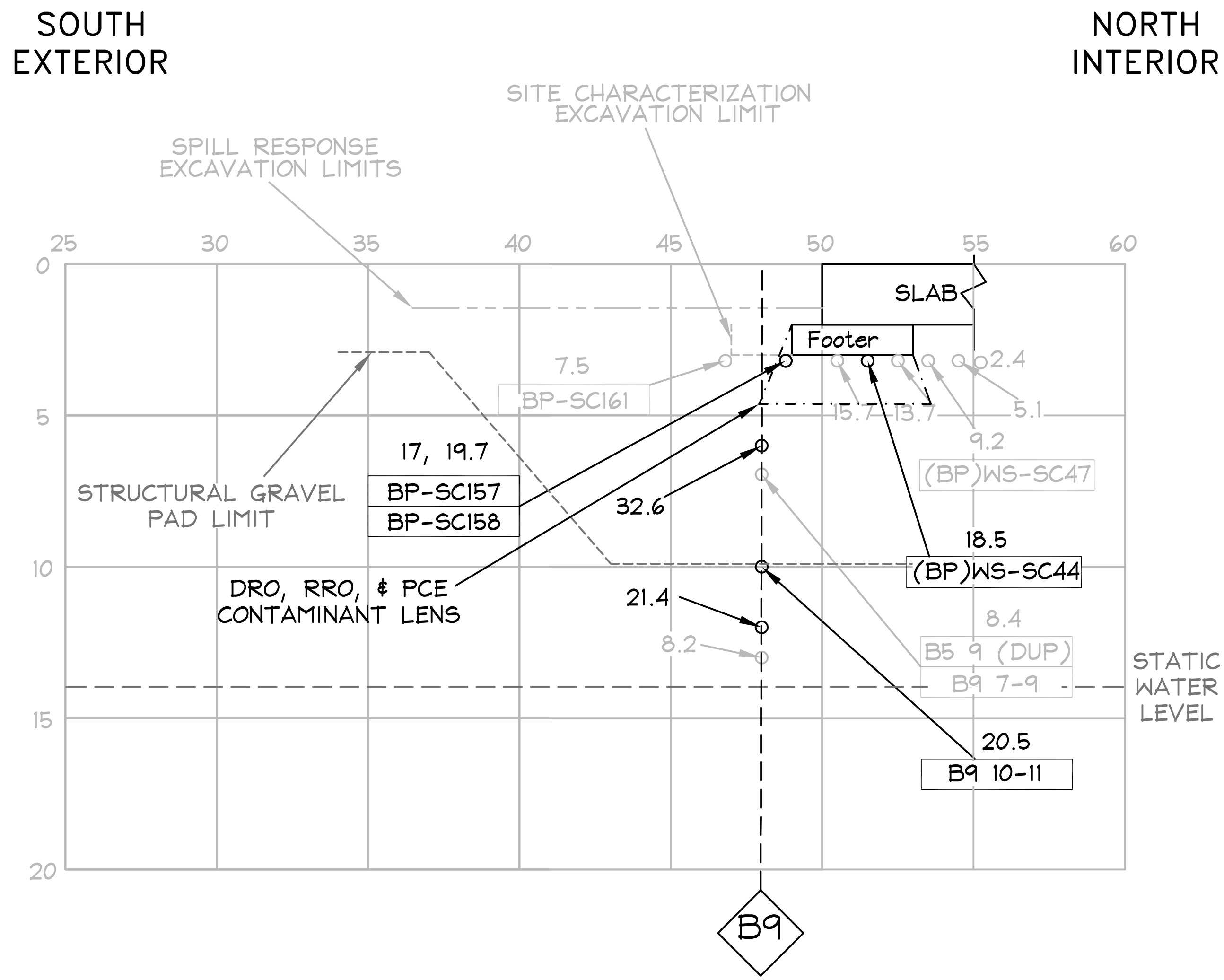
Field Screening and Lab Sample Locations
Southwest Building Perimeter & West Ditch
NAPA Van Horn Road Site Characterization, Fairbanks, AK.

DATE: 01/18/13	SCALE: 1" = 10'
DESIGN: PLB	PROJECT: 11-1042
DRAWN: PEF	DWG: 111042J(B9)

FIGURE B9





KEY

XX-XXXX	SAMPLE LOCATION
X.X	PID

NOTE:

1. BOLD SAMPLE LOCATION INDICATES RESULT EXCEEDS ADEC CLEANUP LEVELS

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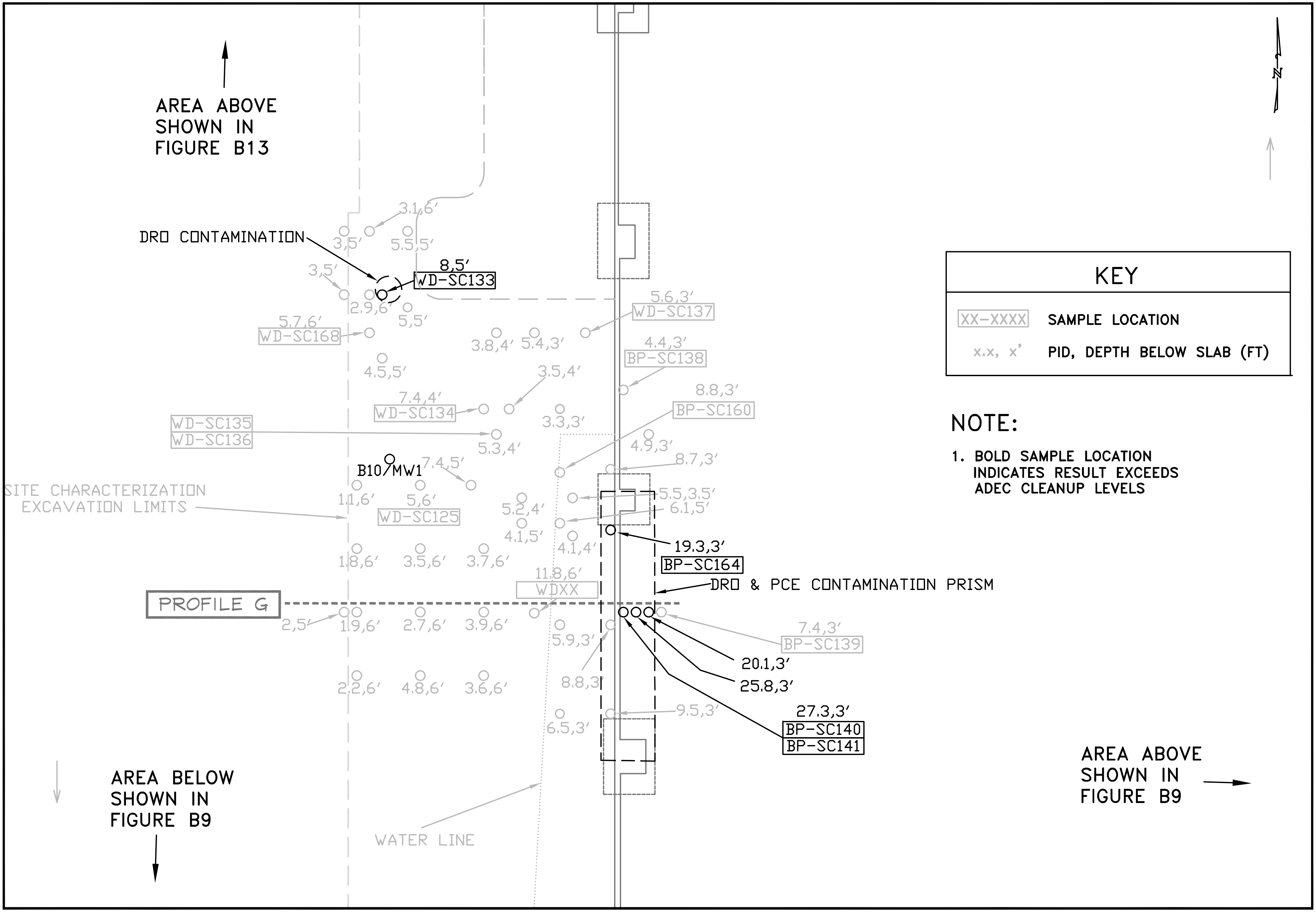
Southwest Building Perimeter - Profile F
NAPA Van Horn Road Site Characterization
Fairbanks, Alaska

DATE: 01/18/13	SCALE: 1" = 6'	FIGURE
DESIGN: PLB	PROJECT: 11-1042	B10
DRAWN: PEF	DWG: 111042J(B10)	



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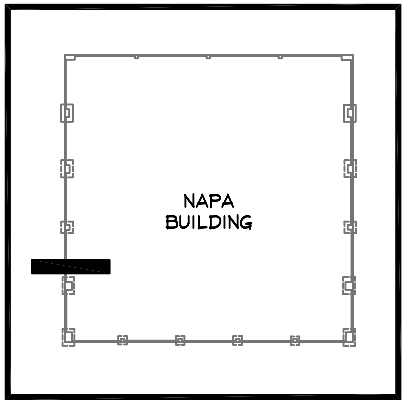
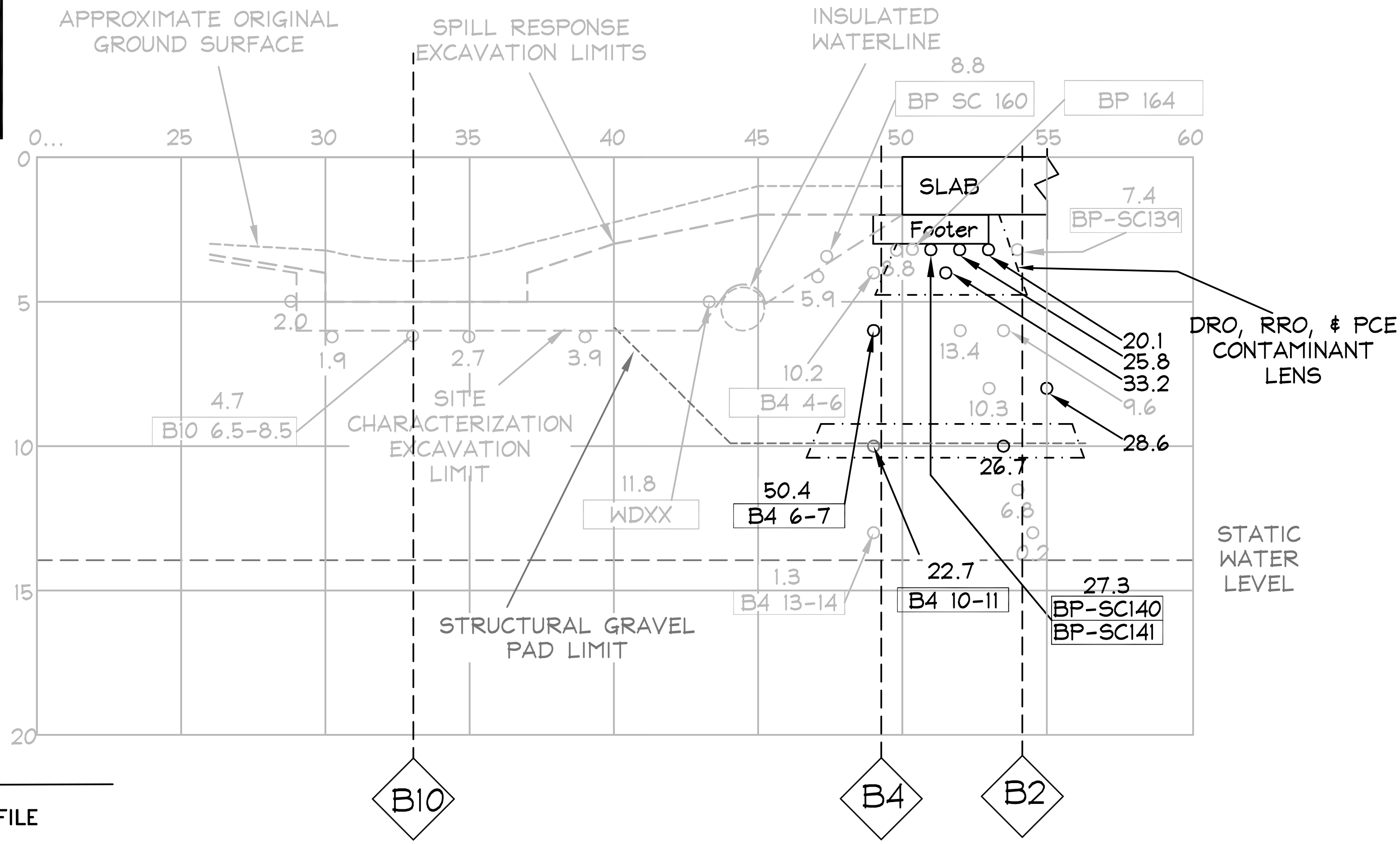
Field Screening & Lab Sample Locations
Western Building Perimeter & West Ditch
NAPA Van Horn Road Site Characterization, Fairbanks, AK.

DATE: 01/18/13	SCALE: 1" = 10'
DESIGN: PLB	PROJECT: 11-1042
DRAWN: PEF	DWG: 111042J(B11)

FIGURE B11



KEY	
XX-XXXX	SAMPLE LOCATION
X.X	PID



NOTES:

1. B10 10' NORTH OF PROFILE CROSS–SECTION
2. B4 20' SOUTH OF PROFILE CROSS SECTION
3. BOLD SAMPLE LOCATION INDICATES RESULT EXCEEDS ADEC CLEANUP LEVELS

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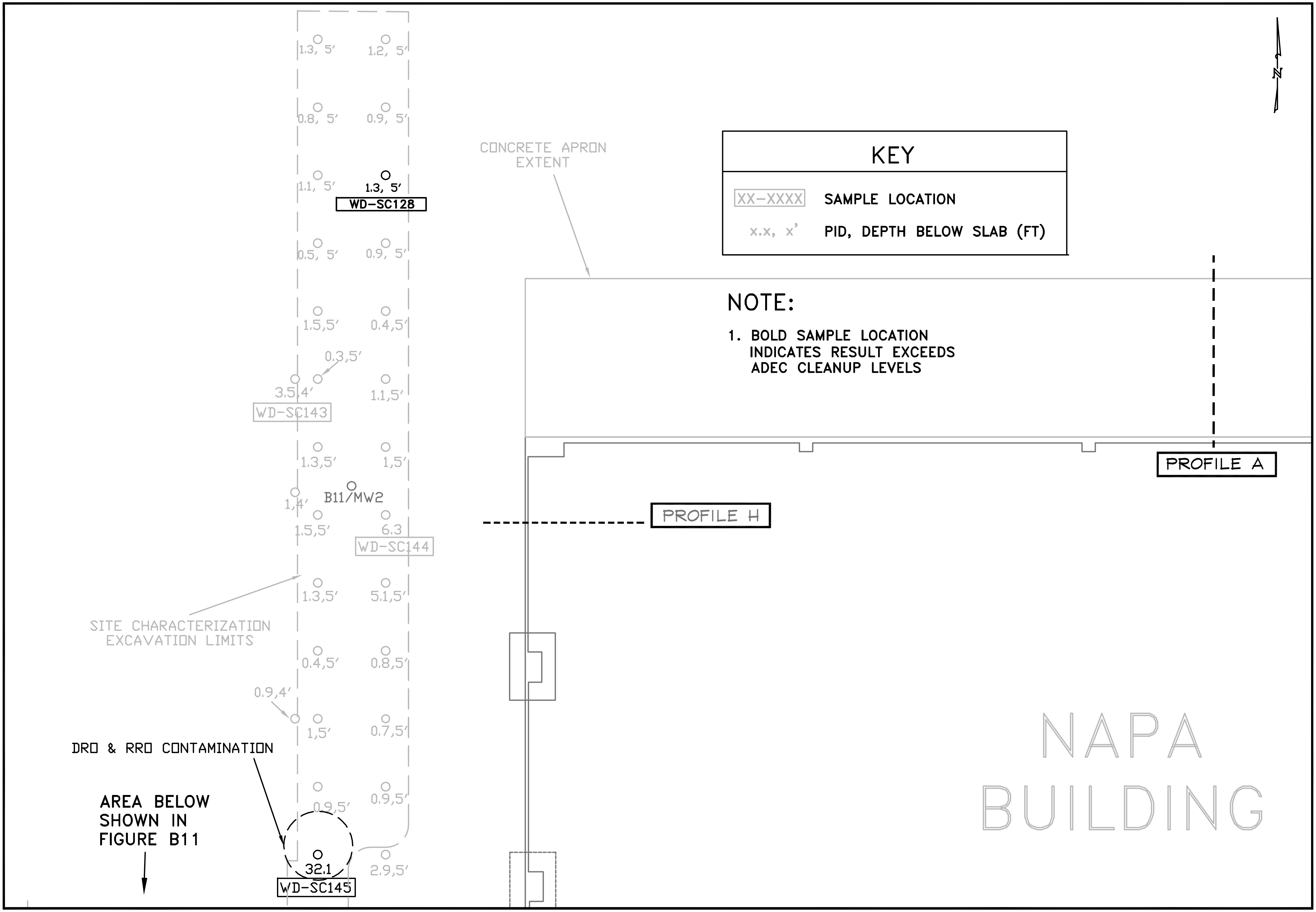
Southwest Building Perimeter and West Ditch- Profile G
NAPA Van Horn Road Site Characterization
Fairbanks, Alaska

DATE: 01/18/13	SCALE: 1" = 6'
DESIGN: PLB	PROJECT: 11-1042
DRAWN: PEF	DWG: 111042J(B12)

FIGURE
B12



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3105 Lakeshore Dr. Anch, Alaska 99517 Ph: 907-222-2445
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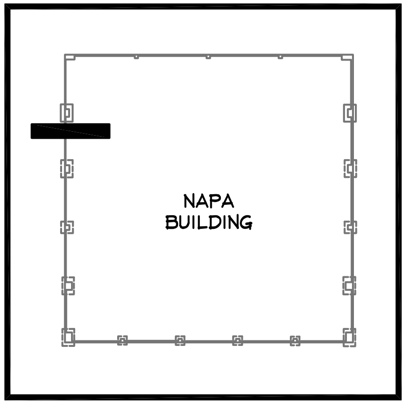
Field Screening & Lab Sample Locations
Northwest Building Perimeter & West Ditch
NAPA Van Horn Road Site Characterization, Fairbanks AK.

DATE: 01/18/13	SCALE: 1" = 10'
DESIGN: PLB	PROJECT: 11-1042
DRAWN: PEF	DWG: 111042J(B13)

FIGURE
B13

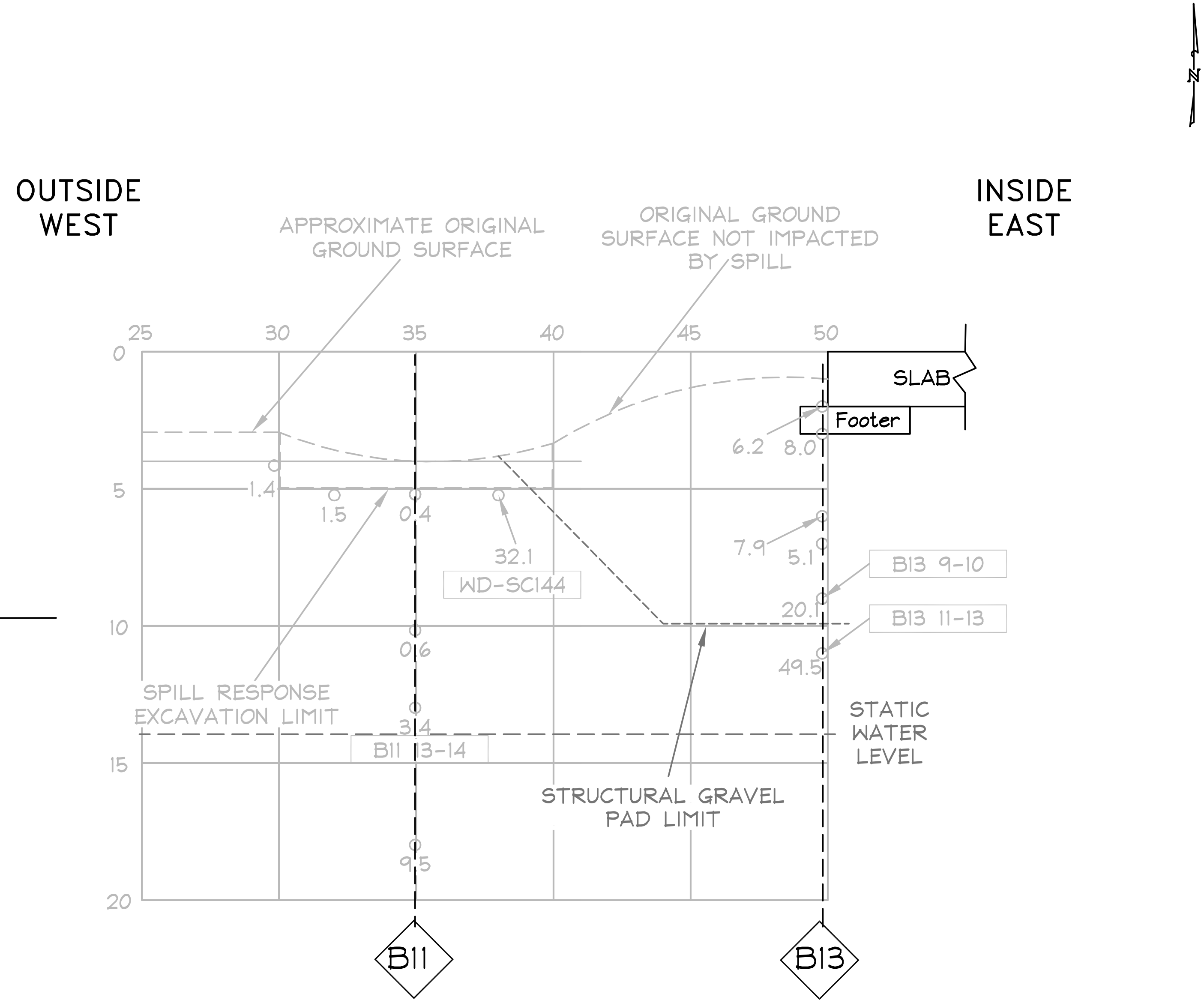


KEY

XX-XXXX	SAMPLE LOCATION
X.X	PID

NOTES:

1. B13 25' NORTH OF PROFILE CROSS-SECTION
2. B11/MW2 5' SOUTH OF PROFILE CROSS SECTION



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Northwest Building Perimeter and West Ditch - Profile H
NAPA Van Horn Road Site Characterization
Fairbanks, Alaska

DATE: 01/18/13	SCALE: 1" = 6'
DESIGN: PLB	PROJECT: 11-1042
DRAWN: PEF	DWG: 111042J(B14)

FIGURE B14

Appendix 2

Site Characterization Summary Tables

Table 1
Site Characterization Soil Samples - Detected Compounds Only

			Petroleum Fractions			VOCs						Glycols	
Analyte	**Work Order**	**PID**	GRO	DRO	RRO	Benzene	Ethyl benzene	Naphthalene	Tetrachloro ethene	Toluene	Total xylenes	Ethylene	Propylene
Sample ID		ppm	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Cleanup Level			300	250	11000	0.025	6.9	20	0.024	6.5	63	190	1900
Perimeter Ditches													
Northwest Ditch													
NW-SC22	1118898	0.3	1.6 U	20.6 U	106	0.00801 U	0.016 U	0.0321 U	0.00801 U	0.016 U	0.0641 U	< 2.0 U	< 2.0 U
NW-SC23	1118898	0.2	5.74 U	27.1 U	122	*0.008 DL*	0.0574 U	0.115 U	*0.008 DL*	0.0574 U	0.23 U	< 2.0 U	< 2.0 U
NW-SC24	1118898	0.1	3.94 U	24.7 U	128	0.0197 U	0.0394 U	0.0787 U	0.0197 U	0.0394 U	0.157 U	< 2.0 U	< 2.0 U
North Ditch													
N-SC18	1118898	5.6	3.61 U	24.2 U	24.2 U	0.0181 U	0.0361 U	0.0723 U	0.0181 U	0.0361 U	0.145 U	< 2.0 U	< 2.0 U
N-SC19	1118898	5.2	3.2 U	23.5 U	23.5 U	0.016 U	0.032 U	0.064 U	0.016 U	0.032 U	0.128 U	< 2.0 U	< 2.0 U
N-SC20	1118898	5.5	2.7 U	22.6 U	22.6 U	0.0135 U	0.027 U	0.0539 U	0.0135 U	0.027 U	0.108 U	< 2.0 U	< 2.0 U
N-SC21	1118898	5.4	1.99 U	20.5 U	51.4	0.00997 U	0.0199 U	0.0399 U	0.00997 U	0.0199 U	0.0798 U	< 2.0 U	< 2.0 U
Northeast Ditch													
NE-SC13	1118898	4.3	5.07 U	27.2 U	121	*0.008 DL*	0.0507 U	0.101 U	*0.008 DL*	0.0507 U	0.203 U	< 2.0 U	< 2.0 U
NE-SC14	1118898	4.2	3.76 U	23	127	0.0188 U	0.0376 U	0.0752 U	0.0188 U	0.0376 U	0.15 U	< 2.0 U	< 2.0 U
NE-SC15	1118898	4.7	4.17 U	25.6 U	82.5	0.0208 U	0.0417 U	0.0834 U	0.0208 U	0.0417 U	0.167 U	< 2.0 U	< 2.0 U
East-Northern Ditch													
EN-SC10	1118898	2.1	7.2 U	30.2 U	224	*0.008 DL*	0.072 U	0.144 U	*0.008 DL*	0.072 U	0.288 U	< 2.0 U	< 2.0 U
EN-SC11	1118898	2.1	5.26 U	29.2	186	*0.008 DL*	0.0526 U	0.105 U	*0.008 DL*	0.0526 U	0.210 U	< 2.0 U	< 2.0 U
(EN) NE-SC12	1118898	1.9	4.1 U	25.3 U	91.4	0.0205 U	0.041 U	0.0821 U	0.0205 U	0.041 U	0.164 U	< 2.0 U	< 2.0 U
East-Southern Ditch													
ES-SC08	1118898	3.7	7.86 U	56.7	386	*0.008 DL*	0.0786 U	0.157 U	*0.008 DL*	0.0786 U	0.0314 U	< 2.0 U	< 2.0 U
ES-SC09	1118898	3.4	4.61 U	26.0 U	74	0.0231 U	0.0461 U	0.0923 U	0.0231 U	0.0461 U	0.185 U	< 2.0 U	< 2.0 U
Southeast Ditch													
SE-SC01 (DP5)	1118898	4.4	5.77 U	30.8	213	*0.008 DL*	0.0577 U	0.115 U	*0.008 DL*	0.0577 U	0.231 U	< 2.0 U	< 2.0 U
SE-SC16 (DP5)	1118898	4.4	5.7 U	30	199	*0.008 DL*	0.057 U	0.114 U	*0.008 DL*	0.057 U	0.228 U	< 2.0 U	< 2.0 U
SE-SC02 (DP6)	1118898	4.6	4.03 U	29.4	192	0.0202 U	0.0403 U	0.0806 U	0.0202 U	0.0403 U	0.161 U	< 2.0 U	< 2.0 U
SE-SC17 (DP6)	1118898	4.6	4.38 U	32.2	209	0.0219 U	0.0438 U	0.0876 U	0.0219 U	0.0438 U	0.175 U	< 2.0 U	< 2.0 U
SE-SC03	1118898	5.2	3.65 U	37	284	0.0182 U	0.0365 U	0.073 U	0.0182 U	0.0365 U	0.146 U	< 2.0 U	< 2.0 U
SE-SC04	1118898	6.8	4.24 U	24.0 U	170	0.0212 U	0.0424 U	0.0848 U	0.0212 U	0.0424 U	0.170 U	< 2.0 U	< 2.0 U
SE-SC05	1118898	5.5	1.89 U	20.5 U	67.9	0.00947 U	0.0189 U	0.0379 U	0.00947 U	0.0189 U	0.0758 U	< 2.0 U	< 2.0 U
SE-SC06	1118898	5.7	5.54 U	29.9	221	*0.008 DL*	0.0554 U	0.111 U	*0.008 DL*	0.0554 U	0.221 U	< 2.0 U	< 2.0 U
SE-SC07	1118898	5.4	4.61 U	26.8 U	153	0.0231 U	0.0461 U	0.0923 U	0.0231 U	0.0461 U	0.185 U	< 2.0 U	< 2.0 U
South Ditch													
S-SC25 (DP7)	1118898	5.5	6.67 U	75.7	395	*0.008 DL*	0.0667 U	0.133 U	*0.008 DL*	0.0667 U	0.267 U	< 2.0 U	< 2.0 U
S-SC26 (DP7)	1118898	5.5	7.13 U	90.1	475	*0.008 DL*	0.0713 U	0.143 U	*0.008 DL*	0.0713 U	0.285 U	< 2.0 U	< 2.0 U
S-SC27	1118898	4.9	3.94 U	25.9	140	0.0197 U	0.0394 U	0.0787 U	0.0197 U	0.0394 U	0.157 U	< 2.0 U	< 2.0 U
S-SC28	1118898	4.8	3.82 U	25.7 U	147	0.0191 U	0.0382 U	0.0764 U	0.0191 U	0.0382 U	0.153 U	< 2.0 U	< 2.0 U
SW-SC29	1118898	2.5	5.4 U	26.8 U	114	*0.008 DL*	0.054 U	0.108 U	*0.008 DL*	0.054 U	0.216 U	< 2.0 U	< 2.0 U
SW-SC30	1118898	1.9	7.09 U	28.5 U	160	*0.008 DL*	0.0709 U	0.142 U	*0.008 DL*	0.0709 U	0.284 U	< 2.0 U	< 2.0 U
Former Waste Storage Areas													
PIT3-SC36	1118921	6.5	4.01 U	24.6 U	24.6 U	0.02 U	0.0401 U	0.0802 U	0.02 U	0.0401 U	0.160 U	< 2.0 U	< 2.0 U
PIT3-SC79	1119616	5.0	4.11 U	24.7 U	64.9	0.0206 U	0.0411 U	0.0823 U	0.0206 U	0.0411 U	0.165 U	< 2.0 U	< 2.0 U
PIT4-SC37	1118921	2.9	2.42 U	20.8 U	20.8 U	0.0121 U	0.0242 U	0.0483 U	0.0121 U	0.0242 U	0.0966 U	< 2.0 U	< 2.0 U
PIT4-SC80	1119616	3.4	1.45 U	20.5 U	72.9	0.00727 U	0.0145 U	0.0291 U	0.00727 U	0.0145 U	0.0581 U	< 2.0 U	< 2.0 U
PIT5-SC38	1118921	5.2	1.61 U	20.6 U	20.6 U	0.00805 U	0.0161 U	0.0322 U	0.00805 U	0.0161 U	0.0644 U	< 2.0 U	< 2.0 U
PIT5-SC81 (DP15)	1119616	4.4	1.35 U	20.4 U	89.7	0.00675 U	0.0135 U	0.027 U	0.00675 U	0.0135 U	0.054 U	< 2.0 U	< 2.0 U
PIT5-SC82 (DP15)	1119616	4.9	1.6 U	20.4 U	63.7	0.00801 U	0.016 U	0.0321 U	0.00801 U	0.016 U	0.0641 U	< 2.0 U	< 2.0 U
PIT5-SC83	1119616	3.0	1.48 U	20.3 U	23.4	0.00739 U	0.0148 U	0.0296 U	0.00739 U	0.0148 U	0.0591 U	< 2.0 U	< 2.0 U
PIT6-SC84	1119616	6.0	1.34 U	22.3	128	0.00670 U	0.0134 U	0.0268 U	0.00670 U	0.0134 U	0.0536 U	< 2.0 U	< 2.0 U
PIT6-SC85	1119616	5.6	1.44 U	20.5 U	24	0.0072 U	0.0144 U	0.0288 U	0.0072 U	0.0144 U	0.0576 U	< 2.0 U	< 2.0 U
PIT7-SC86[1]	1119616	15.8	2.51 U	**1180**	2640	0.0125 U	0.0251 U	0.367	0.0125 U	0.0251 U	0.100 U	< 2.0 U	< 2.0 U
PIT7-SC87	1119616	13.9	3.22 U	56.9	316	0.0161 U	0.0322 U	0.0644 U	0.0161 U	0.0322 U	0.129 U	< 2.0 U	< 2.0 U
Eastern Stockpile (SP1)													
SP1-SC116	1119647	4.0	1.51 U	20.4 U	43.1	0.00754 U	0.0151 U	0.0302 U	0.00754 U	0.0151 U	0.0603 U	< 2.0 U	< 2.0 U
SP1-SC31	1118898	2.2	2.69 U	**286**	1690	0.0134 U	0.0269 U	0.0537 U	0.0134 U	0.0269 U	0.107 U	< 2.0 U	< 2.0 U
SP1-SC32 (DP8)	1118898	2.2	2.7 U	194	1170	0.0135 U	0.027 U	0.0539 U	0.0135 U	0.027 U	0.108 U	< 2.0 U	< 2.0 U
SP1-SC33 (DP8)	1118898	1.3	2.61 U	58.4	238	0.0131 U	0.0261 U	0.0523 U	0.0131 U	0.0316	0.105 U	< 2.0 U	< 2.0 U

Notes:

# U	Analyte not detected at the listed detection limit
Shade	Analyte detected in concentration below the ADEC Cleanup level
Shade	Analyte detected in concentration above the ADEC Cleanup level
DP#	Field Duplicate Pair
# DL	LOQ above ADEC cleanup level; DL is listed and under the cleanup level
1	n-butylbenzene (0.0795 mg/kg) detected below cleanup level (15mg/kg)
2	4-Isopropyltoluene (0.0437 mg/kg) detected below cleanup level (NE)

Table 1

Site Characterization Soil Samples - Detected Compounds Only

			Petroleum Fractions			VOCs						Glycols	
Analyte	**Work Order**	**PID**	GRO	DRO	RRO	Benzene	Ethyl benzene	Naphthalene	Tetrachloro ethene	Toluene	Total xylenes	Ethylene	Propylene
Sample ID		ppm	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Cleanup Level			300	250	11000	0.025	6.9	20	0.024	6.5	63	190	1900
Former Waste Storage Areas (continued)													
Southern Stockpiles (SP2, SP3, SP4, and SP7)													
SP2-SC100	1119616	4.0	3.61 U	23.6 U	116	0.018 U	0.0361 U	0.0721 U	0.018 U	0.0361 U	0.144 U	< 2.0 U	< 2.0 U
SP2-SC101	1119616	5.5	3.77 U	23.1 U	61.5	0.0189 U	0.0377 U	0.0754 U	0.0189 U	0.0377 U	0.151 U	< 2.0 U	< 2.0 U
SP2-SC102	1119616	7.4	3.52 U	22.8 U	117	0.0176 U	0.0352 U	0.0704 U	0.0176 U	0.0352 U	0.141 U	< 2.0 U	< 2.0 U
SP3-SC40	1118921	14.6	1.16 U	470	3190	0.00578 U	0.0116 U	0.132	0.00578 U	0.0116 U	0.0463 U	< 2.0 U	< 2.0 U
SP3-SC41	1118921	11.8	1.24 U	74.1	364	0.00618 U	0.0124 U	0.0247 U	0.00618 U	0.0124 U	0.0494 U	< 2.0 U	< 2.0 U
SP3-SC42 (DP10)	1118921	15.3	1.49 U	134	992	0.00743 U	0.0149 U	0.0297 U	0.00743 U	0.0149 U	0.0594 U	< 2.0 U	< 2.0 U
SP3-SC43 (DP10)	1118921	15.3	1.35 U	154	1270	0.00677 U	0.0135 U	0.0271 U	0.00677 U	0.0135 U	0.0542 U	< 2.0 U	< 2.0 U
PIT8-SC88	1119616	5.8	1.61 U	102	589	0.00807 U	0.0161 U	0.0323 U	0.00807 U	0.0161 U	0.0645 U	< 2.0 U	< 2.0 U
PIT8-SC89	1119616	5.3	1.45 U	20.6 U	20.6 U	0.00727 U	0.0145 U	0.0291 U	0.00727 U	0.0145 U	0.0582 U	< 2.0 U	< 2.0 U
PIT8-SC90	1119616	7.9	1.4 U	274	1230	0.00698 U	0.014 U	0.0279 U	0.00698 U	0.014 U	0.0558 U	< 2.0 U	< 2.0 U
PIT8-SC91	1119616	6.7	1.81 U	20.6 U	20.6 U	0.00905 U	0.0181 U	0.0362 U	0.00905 U	0.0181 U	0.0724 U	< 2.0 U	< 2.0 U
PIT8-SC92 (DP16)	1119616	8.1	1.26 U	20.4 U	92.3	0.00632 U	0.0126 U	0.0253 U	0.00632 U	0.0126 U	0.0506 U	< 2.0 U	< 2.0 U
PIT8-SC93 (DP16)	1119616	8.1	1.41 U	20.2 U	67.1	0.00704 U	0.0141 U	0.0282 U	0.00704 U	0.0141 U	0.0563 U	< 2.0 U	< 2.0 U
SP7-SC94	1119616	3.8	1.25 U	20.4 U	147	0.00626 U	0.0125 U	0.0251 U	0.00626 U	0.0125 U	0.0501 U	< 2.0 U	< 2.0 U
SP7-SC95	1119616	3.2	4.16 U	24.1 U	295	0.0208 U	0.0416 U	0.0832 U	0.0208 U	0.0416 U	0.166 U	< 2.0 U	< 2.0 U
SP7-SC96	1119616	3.7	3.36 U	26.2	257	0.0168 U	0.0336 U	0.0672 U	0.0168 U	0.0336 U	0.134 U	< 2.0 U	< 2.0 U
SS1-SC74	1119616	3.6	3.33 U	24.9 U	125	0.0167 U	0.0333 U	0.0667 U	0.0167 U	0.0333 U	0.133 U	< 2.0 U	< 2.0 U
SS2-SC73	1119616	2.9	3.96 U	25.1 U	71.1	0.0198 U	0.0396 U	0.0792 U	0.0198 U	0.0396 U	0.158 U	< 2.0 U	< 2.0 U
Southern Supersack Storage Area													
5Y-SC45	1118921	6.3	2.11 U	119	984	0.0105 U	0.0211 U	0.0421 U	0.0105 U	0.0211 U	0.0842 U	< 2.0 U	< 2.0 U
5Y-SC46	1118921	5.1	1.42 U	379	2980	0.00708 U	0.0142 U	0.0283 U	0.00708 U	0.0142 U	0.0566 U	< 2.0 U	< 2.0 U
5Y-SC108 (DP18)	1119616	3.7	1.61 U	199	1730	0.00803 U	0.0161 U	0.0321 U	0.00803 U	0.0161 U	0.0643 U	< 2.0 U	< 2.0 U
5Y-SC109 (DP18)	1119616	3.7	1.33 U	302	2310	0.00667 U	0.0133 U	0.0267 U	0.00667 U	0.0133 U	0.0534 U	< 2.0 U	< 2.0 U
DSS-SC103	1119616	4.3	1.27 U	20.2 U	22.4	0.00633 U	0.0127 U	0.0253 U	0.00633 U	0.0127 U	0.0506 U	< 2.0 U	< 2.0 U
DSS-SC104	1119616	4.2	1.31 U	20.1 U	29.5	0.00656 U	0.0131 U	0.0262 U	0.00656 U	0.0154	0.0525 U	< 2.0 U	< 2.0 U
T45-SC105	1119616	4.0	1.42 U	20.4 U	20.4 U	0.00710 U	0.0142 U	0.0284 U	0.00710 U	0.0142 U	0.0568 U	< 2.0 U	< 2.0 U
T45-SC106	1119616	4.7	1.07 U	20.1 U	20.1 U	0.00536 U	0.0107 U	0.0214 U	0.00536 U	0.0107 U	0.0429 U	< 2.0 U	< 2.0 U
SS5-SC68 (DP14)	1119616	4.2	1.25 U	19.9 U	65.5	0.00623 U	0.0125 U	0.0249 U	0.00623 U	0.0125 U	0.0498 U	< 2.0 U	< 2.0 U
SS5-SC69 (DP14)	1119616	4.2	1.27 U	20.2 U	39	0.00636 U	0.0127 U	0.0254 U	0.00636 U	0.0127 U	0.0509 U	< 2.0 U	< 2.0 U
SS5-SC70	1119616	3.8	1.26 U	20.3 U	32.8	0.00631 U	0.0126 U	0.0252 U	0.00631 U	0.0126 U	0.0504 U	< 2.0 U	< 2.0 U
Driveways													
North Driveway													
RP-SC57	1119616	6.3	1.45 U	20.3 U	20.3 U	0.00727 U	0.0145 U	0.0291 U	0.00727 U	0.0145 U	0.0582 U	< 2.0 U	< 2.0 U
RP-SC60	1119616	5.4	1.33 U	20.3 U	233	0.00665 U	0.0133 U	0.0266 U	0.00665 U	0.0133 U	0.0532 U	< 2.0 U	< 2.0 U
RP-SC61	1119616	5.6	1.37 U	20.4 U	25.6	0.00687 U	0.0137 U	0.0275 U	0.00687 U	0.0137 U	0.0549 U	< 2.0 U	< 2.0 U
RP-SC62	1119616	5.3	1.26 U	20.3 U	20.3 U	0.00628 U	0.0126 U	0.0251 U	0.00628 U	0.0126 U	0.0503 U	< 2.0 U	< 2.0 U
RP-SC63	1119616	5.5	1.37 U	41.4	306	0.00683 U	0.0137 U	0.0273 U	0.00683 U	0.0137 U	0.0546 U	< 2.0 U	< 2.0 U
RP-SC64	1119616	5.5	1.23 U	20.0 U	79.1	0.00615 U	0.0123 U	0.0246 U	0.00615 U	0.0123 U	0.0492 U	< 2.0 U	< 2.0 U
RP-SC66	1119616	4.5	1.3 U	20.9	110	0.00648 U	0.013 U	0.0259 U	0.00648 U	0.013 U	0.0518 U	< 2.0 U	< 2.0 U
East Driveway													
No Samples Collected													
South Driveway													
SA-SC97	1119616	5.7	3.45 U	36.8	289	0.0173 U	0.0345 U	0.0691 U	0.0173 U	0.0345 U	0.138 U	< 2.0 U	< 2.0 U
SA-SC98 (DP17)	1119616	6.6	3.07 U	23.3 U	107	0.0154 U	0.0307 U	0.0614 U	0.0154 U	0.0307 U	0.123 U	< 2.0 U	< 2.0 U
SA-SC99 (DP17)	1119616	6.6	4.33 U	23.6 U	76.6	0.0217 U	0.0433 U	0.0866 U	0.0217 U	0.0433 U	0.173 U	< 2.0 U	< 2.0 U
PIT1-SC34 (DP9)	1118921	7.8	1.68 U	392	2870	0.0084 U	0.0168 U	0.0336 U	0.0084 U	0.0168 U	0.0672 U	< 2.0 U	< 2.0 U
PIT0-SC35 (DP9)	1118921	7.8	1.83 U	277	1900	0.00913 U	0.0183 U	0.0365 U	0.00913 U	0.0183 U	0.0731 U	< 2.0 U	< 2.0 U
PIT1-SC75	1119616	0.9	1.39 U	48	308	0.00696 U	0.0139 U	0.0278 U	0.00696 U	0.0139 U	0.0557 U	< 2.0 U	< 2.0 U
PIT1-SC76	1118921	5.8	2.79 U	23.5 U	88.2	0.014 U	0.0279 U	0.0559 U	0.014 U	0.0279 U	0.112 U	< 2.0 U	< 2.0 U
PIT1-SC107	1119616	4.0	1.43 U	41.8	271	0.00715 U	0.0143 U	0.0286 U	0.00715 U	0.0143 U	0.0576 U	< 2.0 U	< 2.0 U
PIT2-SC39	1118921	10.5	3.5 U	69.5	427	0.0175 U	0.035 U	0.070 U	0.0175 U	0.035 U	0.140 U	< 2.0 U	< 2.0 U
PIT2-SC77	1119616	4.2	2.55 U	40.2	310	0.0128 U	0.0255 U	0.0511 U	0.0128 U	0.0255 U	0.102 U	< 2.0 U	< 2.0 U
PIT2-SC78	1119616	0.8	2.69 U	34.1	254	0.0148 U	0.0269 U	0.0593 U	0.0148 U	0.0269 U	0.119 U	< 2.0 U	< 2.0 U
SS3-SC72	1119616	5.2	2.93 U	22.9 U	36	0.0146 U	0.0293 U	0.0586 U	0.0146 U	0.0293 U	0.117 U	< 2.0 U	< 2.0 U
SS4-SC71	1119616	4.1	3.88 U	24.9 U	92.4	0.0194 U	0.0388 U	0.559	0.0194 U	0.0388 U	0.155 U	< 2.0 U	< 2.0 U
SS6-SC67	1119616	4.1	1.26 U	22.9 U	258	0.00628 U	0.0126 U	0.0251 U	0.00628 U	0.0126 U	0.0503 U	< 2.0 U	< 2.0 U

Notes:

# U	Analyte not detected at the listed detection limit
Shade	Analyte detected in concentration below the ADEC Cleanup level
Shade	Analyte detected in concentration above the ADEC Cleanup level
DP#	Field Duplicate Pair
# DL	LOQ above ADEC cleanup level; DL is listed and under the cleanup level
1	n-butylbenzene (0.0795 mg/kg) detected below cleanup level (15mg/kg)
2	4-Isopropyltoluene (0.0437 mg/kg) detected below cleanup level (NE)

Table 1

Site Characterization Soil Samples - Detected Compounds Only

			Petroleum Fractions			VOCs						Glycols	
Analyte	**Work Order**	**PID**	GRO	DRO	RRO	Benzene	Ethyl benzene	Naphthalene	Tetrachloro ethene	Toluene	Total xylenes	Ethylene	Propylene
Sample ID		ppm	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Cleanup Level			300	250	11000	0.025	6.9	20	0.024	6.5	63	190	1900
West Ditch													
Figure B9													
WD-SC169[2]	1119669	24.5	2.96 U	2850	16100	0.0148 U	0.0296 U	0.0727	0.078	0.0296 U	0.118 U	< 2.0 U	< 2.0 U
WD-SC167	1119669	2.6	2 U	20.2 U	49.4	0.01 U	0.02 U	0.0401 U	0.01 U	0.02 U	0.0802 U	< 2.0 U	< 2.0 U
WD-SC165 (DP26)	1119669	7.2	3.97 U	23.5 U	131	0.0198 U	0.0397 U	0.0793 U	0.0198 U	0.0397 U	0.159 U	< 2.0 U	< 2.0 U
WD-SC166 (DP26)	1119669	7.2	3.79 U	24 U	124	0.019 U	0.0379 U	0.0758 U	0.019 U	0.0379 U	0.152 U	< 2.0 U	< 2.0 U
WD-SC120 (DP21)	1119647	10.4	1.77 U	145	740	0.00885 U	0.0177 U	0.0354 U	0.0117	0.0177 U	0.0708 U	< 2.0 U	< 2.0 U
WD-SC127 (DP21)	1119647	10.4	1.44 U	103	574	0.00719 U	0.0144 U	0.0287 U	0.0213	0.0144 U	0.0575 U	< 2.0 U	< 2.0 U
WD-SC126	1119647	5.1	1.78 U	360	341	0.00891 U	0.0178 U	0.0356 U	0.0216	0.0178 U	0.0712 U	< 2.0 U	< 2.0 U
WD-SC121	1119647	6.1	1.57 U	71.6	392	0.00787 U	0.0157 U	0.0315 U	0.0482	0.0157 U	0.063 U	< 2.0 U	< 2.0 U
WD-SC122	1119647	4.7	1.41 U	21.4	113	0.00706 U	0.0141 U	0.0282 U	0.0557	0.0141 U	0.0564 U	< 2.0 U	< 2.0 U
WD-SC123	1119647	3.9	2.32 U	39.1	244	0.0116 U	0.0232 U	0.0464 U	0.0279	0.0232 U	0.0929 U	< 2.0 U	< 2.0 U
WD-SC124	1119647	5.5	3.54 U	199	1010	0.0177 U	0.0354 U	0.0707 U	0.0304	0.0354 U	0.141 U	< 2.0 U	< 2.0 U
WD-SC125	1119647	5.0	5.22 U	63.6	400	*0.008 DL*	0.0522 U	0.104 U	0.104	0.0522 U	0.209 U	< 2.0 U	< 2.0 U
WDX	1110004	8.7	2.44 U	10.4 U	52 U	0.005 U	0.012 U	NA	NA	0.012 U	0.024 U	NA	NA
(WD)BP-SC142	1119647	2.1	1.72 U	20.6 U	48.4	0.00862 U	0.0172 U	0.0345 U	0.00862 U	0.0172 U	0.0689 U	< 2.0 U	< 2.0 U
Figure B11													
WDXX	1110004	11.8	2.43 U	55.9	287	0.005 U	0.012 U	NA	NA	0.012 U	0.024 U	NA	NA
WD-SC133	1119647	8.0	3.27 U	780	3790	0.0163 U	0.0327 U	0.0654 U	0.0163 U	0.0327 U	0.131 U	< 2.0 U	< 2.0 U
WD-SC168	1119669	5.7	5.33 U	77.1	463	*0.008 DL*	0.0533 U	0.107 U	*0.008 DL*	0.0533 U	0.213 U	< 2.0 U	< 2.0 U
WD-SC134	1119647	7.4	1.66 U	20.6 U	51.2	0.00828 U	0.0166 U	0.0331 U	0.0123	0.0166 U	0.0663 U	< 2.0 U	< 2.0 U
WD-SC135 (DP22)	1119647	3.5	1.62 U	20.5 U	23.6	0.00808 U	0.0162 U	0.0323 U	0.00808 U	0.0162 U	0.0646 U	< 2.0 U	< 2.0 U
WD-SC136 (DP22)	1119647	3.5	1.56 U	20.4 U	49.1	0.00779 U	0.0156 U	0.0312 U	0.00779 U	0.0156 U	0.0623 U	< 2.0 U	< 2.0 U
WD-SC137	1119647	5.6	1.55 U	20.4 U	20.4 U	0.00773 U	0.0155 U	0.0309 U	0.00773 U	0.0155 U	0.0618 U	< 2.0 U	< 2.0 U
Figure B13													
WD-SC143	1119647	3.5	1.27 U	20 U	20 U	0.00634 U	0.0127 U	0.0254 U	0.00634 U	0.0127 U	0.0508 U	< 2.0 U	< 2.0 U
WD-SC144	1119647	6.3	2.22 U	22.7 U	116	0.0111 U	0.0222 U	0.0444 U	0.0111 U	0.0222 U	0.0887 U	< 2.0 U	< 2.0 U
WD-SC145	1119647	32.1	1.37 U	3970	18100	0.00685 U	0.0137 U	0.0274 U	0.00685 U	0.0137 U	0.0548 U	< 2.0 U	< 2.0 U
WD-SC128	1119647	1.3	1.52 U	20.3 U	69.4	0.00762 U	0.0152 U	0.0305 U	0.0273	0.0152 U	0.061 U	< 2.0 U	< 2.0 U

Notes:

# U	Analyte not detected at the listed detection limit
Shade	Analyte detected in concentration below the ADEC Cleanup level
Shade	Analyte detected in concentration above the ADEC Cleanup level
DP#	Field Duplicate Pair
# DL	LOQ above ADEC cleanup level; DL is listed and under the cleanup level
1	n-butylbenzene (0.0795 mg/kg) detected below cleanup level (15mg/kg)
2	4-Isopropyltoluene (0.0437 mg/kg) detected below cleanup level (NE)

Table 2
Building Perimeter Soil Samples - Detected Compounds Only
(organized by Figure Number and Soil Profile)

Building Corner		North	North	North
Figure Number		B2	B2	B2
Structural Prism/Exterior		Prism	Prism	Prism
Profile ID/Figure Number		A/B3	A/B3	A/B3
Sample ID	**ADEC**	**RP-SC57**	**RP-SC58**	**RP-SC59**
Duplicate Pair (if #'d)	Cleanup		DP13	DP13
Work Order	Level	1119616	1119616	1119616
PID	ppm	6.3	37.2	37.2
Analyte	mg/kg	mg/kg	mg/kg	mg/kg
Petroleum Fractions				
GRO	300	1.45 U	1.88 U	1.53 U
DRO	250	20.3 U	166	115
RRO	11000	20.3 U	956	641
VOCs				
1,2,4-Trimethylbenzene	23	0.0291 U	0.0375 U	0.0306 U
1,3,5-Trimethylbenzene	23	0.0145 U	0.0188 U	0.0153 U
2-Butanone (MEK)	59	0.145 U	0.188 U	0.153 U
1,2 Dichlorobenzene	5.1	0.0145 U	0.0188 U	0.0153 U
4-Isopropyltoluene	NE	0.0145 U	0.0188 U	0.0153 U
Benzene	0.025	0.00727 U	0.00938 U	0.00765 U
Ethylbenzene	6.9	0.0145 U	0.0188 U	0.0153 U
Isopropylbenzene (Cumene)	51	0.0145 U	0.0188 U	0.0153 U
Naphthalene	20	0.0291 U	0.0375 U	0.0306 U
n-Butylbenzene	15	0.0145 U	0.0188 U	0.0153 U
n-Propylbenzene	15	0.0145 U	0.0188 U	0.0153 U
sec-Butylbenzene	12	0.0145 U	0.0188 U	0.0153 U
Styrene	0.96	0.0145 U	0.0188 U	0.0153 U
Tetrachloroethene (PCE)	0.024	0.00727 U	0.00938 U	0.00765 U
Trichloroethene	0.02	0.00727 U	0.00938 U	0.00765 U
Toluene	6.5	0.0145 U	0.0188 U	0.0153 U
o-Xylene	NE ***	0.0145 U	0.0188 U	0.0153 U
p & m-Xylene	NE ***	0.0291 U	0.0375 U	0.0306 U
Xylenes (total)	63	0.0582 U	0.075 U	0.0612
Glycols				
Ethylene Glycol	190	< 2 U	< 2 U	< 2 U
Propylene Glycol	1900	< 2 U	< 2 U	< 2 U

Notes:

# U	Analyte not detected at the listed detection limit
Shade	Analyte detected in concentration below the ADEC Cleanup level
Shade	Analyte detected in concentration above the ADEC Cleanup level
***	Cleanup level for individual analyte not established; see total xylenes
DP#	Field Duplicate Pair

Table 2
Building Perimeter Soil Samples - Detected Compounds Only
(organized by Figure Number and Soil Profile)

Building Corner		SE	SE	SE	SE	SE	SE	SE	SE	SE
Figure Number		B4	B4	B4	B4	B4	B4	B4	B4	B4
Structural Prism/Exterior		NA	Prism	Ext	Prism	Prism	Prism	Prism	Ext	Ext
Profile ID/Figure Number		Excavated	B/B5	B/B5	C/B6	C/B6	C/B6	C/B6	C/B6	C/B6
Sample ID	**ADEC**	**RP-SC65**	**BP-SC119**	**BP-SC155**	**BP-SC109**	**BP-SC110**	**BP-SC108**	**BP-SC129**	**BP-SC154**	**BP-SC130**
Duplicate Pair (if #'d)	Cleanup				DP19	DP19				
Work Order	Level	1119616	1119647	1119647	1119647	1119647	1119647	1119647	1119647	1119647
PID	ppm	5.3	2.6	9.3	103	103	114	24	9.3	3.9
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Petroleum Fractions										
GRO	300	1.31 U	1.51 U	1.41 U	9.12	20.4	11.5	1.99 U	1.58 U	1.61 U
DRO	250	**597**	20.3 U	20.6 U	**1190**	**766**	**1990**	54.2	89.6	20.7 U
RRO	11000	4470	20.3 U	38.7	7020	4580	**11500**	430	455	115
VOCs										
1,2,4-Trimethylbenzene	23	0.0262 U	0.0301 U	0.0283 U	0.0282 U	0.397	0.0356 U	0.0398 U	0.0315 U	0.0321 U
1,3,5-Trimethylbenzene	23	0.0131 U	0.0151 U	0.0141 U	0.0141 U	0.463	0.114	0.0199	0.0158 U	0.0161 U
2-Butanone (MEK)	59	0.131 U	0.151 U	0.141 U	0.141 U	0.112 U	0.178 U	0.199 U	0.158 U	0.161 U
1,2 Dichlorobenzene	5.1	0.0131 U	0.0151 U	0.0141 U	0.0141 U	0.0112 U	0.0178 U	0.0199 U	0.0158 U	0.0161 U
4-Isopropyltoluene	NE	0.0131 U	0.0151 U	0.0141 U	0.0141 U	0.0864	0.0471	0.0199 U	0.0158 U	0.0161 U
Benzene	0.025	0.00655 U	0.00753 U	0.00707 U	0.00705 U	0.0056 U	0.00891 U	0.00994 U	0.00788 U	0.00803 U
Ethylbenzene	6.9	0.0141	0.0151 U	0.0141 U	0.0141 U	0.0112 U	0.0178 U	0.0199 U	0.0158 U	0.0161 U
Isopropylbenzene (Cumene)	51	0.0131 U	0.0151 U	0.0141 U	0.0141 U	0.0265	0.0178 U	0.0199 U	0.0158 U	0.0161 U
Naphthalene	20	0.0314	0.0301 U	0.0283 U	0.0282 U	0.148	0.0356 U	0.0398 U	0.0315 U	0.0321 U
n-Butylbenzene	15	0.0131 U	0.0151 U	0.0141 U	0.0141 U	0.0112 U	0.0178 U	0.0199 U	0.0158 U	0.0161 U
n-Propylbenzene	15	0.0131 U	0.0151 U	0.0141 U	0.0141 U	0.0194	0.0178 U	0.0199 U	0.0158 U	0.0161 U
sec-Butylbenzene	12	0.0131 U	0.0151 U	0.0141 U	0.0141 U	0.0404	0.0178 U	0.0199 U	0.0158 U	0.0161 U
Styrene	0.96	0.0131 U	0.0151 U	0.0141 U	0.0141 U	0.0112 U	0.0178 U	0.0199 U	0.0158 U	0.0161 U
Tetrachloroethene (PCE)	0.024	0.0198	**0.0642**	0.0195	0.00705 U	**5.7**	**11.1**	**0.0811**	**0.029**	**0.0257**
Trichloroethene	0.02	0.00655 U	0.00753 U	0.00707 U	0.00705 U	0.0056 U	0.00891 U	0.00994 U	0.00788 U	0.00803 U
Toluene	6.5	0.0177	0.0151 U	0.0141 U	0.0141 U	0.0112 U	0.0178 U	0.0199 U	0.0158 U	0.0161 U
o-Xylene	NE ***	0.0131 U	0.0151 U	0.0141 U	0.0141 U	0.413	0.0178 U	0.0199 U	0.0158 U	0.0161 U
p & m-Xylene	NE ***	0.0262 U	0.0301 U	0.0283 U	0.0282 U	0.0807	0.0356 U	0.0398 U	0.0315 U	0.0321 U
Xylenes (total)	63	0.0524 U	0.0603 U	0.0566 U	0.0564 U	0.493	0.0713 U	0.0795 U	0.063 U	0.0642 U
Glycols										
Ethylene Glycol	190	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U
Propylene Glycol	1900	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U

Notes:

# U	Analyte not detected at the listed detection limit
Shade	Analyte detected in concentration below the ADEC Cleanup level
Shade	Analyte detected in concentration above the ADEC Cleanup level
***	Cleanup level for individual analyte not established; see total xylenes
DP#	Field Duplicate Pair

Table 2
Building Perimeter Soil Samples - Detected Compounds Only
(organized by Figure Number and Soil Profile)

Building Corner		SE	SE	SE	SE	SE	SE	SE	SE	SE
Figure Number		B4	B4	B4	B4	B4	B4	B4	B4	B4
Structural Prism/Exterior		Prism	Prism	Prism	Ext	Ext	Prism	Prism	Prism	Ext
Profile ID/Figure Number		D/B7	D/B7	D/B7	D/B7	D/B7	E/D8	E/D8	E/D8	E/D8
Sample ID	**ADEC** Cleanup Level	**BP-SC115**	**BP-SC112**	**BP-SC111**	**BP-SC114**	**BP-SC113**	**BP-SC117**	**BP-SC118**	**BP-SC150**	**BP-SC146**
Duplicate Pair (if #'d)							DP20	DP20		
Work Order		1119647	1119647	1119647	1119647	1119647	1119647	1119647	1119647	1119647
PID	ppm	261	362	331	8.8	5.0	3.4	3.4	239	18.2
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Petroleum Fractions										
GRO	300	3.38	225	186	1.63 U	1.88 U	6.26	5.4	48.8	2.11 U
DRO	250	106	**5160**	**7230**	56.4	42.8	**4440**	**4230**	**7190**	136
RRO	11000	383	**20700**	**30200**	382	247	**23800**	**23300**	**40500**	793
VOCs										
1,2,4-Trimethylbenzene	23	0.21	13.3	4.24	0.0326 U	0.0486	0.0269 U	0.0257 U	0.0523 U	0.0422 U
1,3,5-Trimethylbenzene	23	0.0649	4.4	4.98	0.0163 U	0.0188 U	0.0135 U	0.0129 U	1.11	0.0211 U
2-Butanone (MEK)	59	0.132 U	0.118 U	0.140 U	0.163 U	0.188 U	0.135 U	0.129 U	0.262 U	0.211 U
1,2 Dichlorobenzene	5.1	0.0132 U	0.274	0.55	0.0163 U	0.0188 U	0.0135 U	0.0129 U	0.0262 U	0.0211 U
4-Isopropyltoluene	NE	0.0132 U	0.277	0.3	0.0163 U	0.0188 U	0.0162	0.0129 U	0.104	0.0211 U
Benzene	0.025	0.00658 U	**0.102**	**0.0399**	0.00815 U	0.00939 U	0.00673 U	0.00644 U	0.0131 U	0.0105 U
Ethylbenzene	6.9	0.276	**25.9**	1.4	0.0163 U	0.0229	0.0135 U	0.0129 U	0.0262 U	0.0211 U
Isopropylbenzene (Cumene)	51	0.0222	2.38	0.602	0.0163 U	0.0188 U	0.0135 U	0.0129 U	0.0262 U	0.0211 U
Naphthalene	20	0.111	8.48	4.23	0.0326 U	0.0406	0.0269 U	0.0257 U	0.0759	0.0422 U
n-Butylbenzene	15	0.0258	1.73	0.014 U	0.0163 U	0.0188 U	0.0135 U	0.0129 U	0.0262 U	0.0211 U
n-Propylbenzene	15	0.092	7.7	0.893	0.0163 U	0.0188 U	0.0135 U	0.0129 U	0.0262 U	0.0211 U
sec-Butylbenzene	12	0.0132 U	0.632	0.634	0.0163 U	0.0188 U	0.0135 U	0.0129 U	0.279	0.0211 U
Styrene	0.96	0.0132 U	0.19	0.014 U	0.0163 U	0.0188 U	0.0135 U	0.0129 U	0.0262 U	0.0211 U
Tetrachloroethene (PCE)	0.024	**0.707**	**105**	**216**	**0.26**	**0.204**	**12.2**	**13.5**	**82.5**	**0.356**
Trichloroethene	0.02	0.00658 U	**0.103**	**0.143**	0.00815 U	0.00939 U	0.00673 U	0.00644 U	**0.0207**	0.0105 U
Toluene	6.5	0.0501	2.97	0.359	0.0163 U	0.0188 U	0.0135 U	0.0129 U	0.0262 U	0.0211 U
o-Xylene	NE ***	0.0625	5.06	7.58	0.0163 U	0.0188 U	0.0135 U	0.0135	0.639	0.0211 U
p & m-Xylene	NE ***	0.12	11.2	4.26	0.0326 U	0.0376 U	0.0269 U	0.0257 U	0.0523 U	0.0422 U
Xylenes (total)	63	0.183	16.3	11.8	0.0652 U	0.0751 U	0.0539 U	0.0515 U	0.639	0.0843 U
Glycols										
Ethylene Glycol	190	< 2 U	7.7	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U
Propylene Glycol	1900	< 2 U	55	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U

Notes:

# U	Analyte not detected at the listed detection limit
Shade	Analyte detected in concentration below the ADEC Cleanup level
Shade	Analyte detected in concentration above the ADEC Cleanup level
***	Cleanup level for individual analyte not established; see total xylenes
DP#	Field Duplicate Pair

Table 2
Building Perimeter Soil Samples - Detected Compounds Only
(organized by Figure Number and Soil Profile)

Building Corner		SE	SE	SE	SE	SE	SE
Figure Number		B4	B4	B4	B4	B4	B4
Structural Prism/Exterior		Ext	Prism	Prism	Prism	Prism	Ext
Profile ID/Figure Number		None	None	None	None	None	None
Sample ID	**ADEC**	**BP-SC147**	**BP-SC148**	**BP-SC149**	**BP-SC151**	**BP-SC152**	**BP-SC153**
Duplicate Pair (if #'d)	Cleanup		DP24	DP24			
Work Order	Level	1119647	1119647	1119647	1119647	1119647	1119647
PID	ppm	26.5	358	358	193	12.6	11.2
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Petroleum Fractions							
GRO	300	1.74 U	42.3	30.9	11.7	2.28 U	1.31 U
DRO	250	**1100**	**1200**	**4020**	**2410**	50.7	78.3
RRO	11000	6080	5880	**19000**	**12300**	319	435
VOCs							
1,2,4-Trimethylbenzene	23	0.0348 U	0.0364 U	0.0378 U	0.0354 U	0.0456 U	0.0263 U
1,3,5-Trimethylbenzene	23	0.0191	1.5	1.23	0.115	0.0228 U	0.0131 U
2-Butanone (MEK)	59	0.174 U	0.182 U	0.189 U	0.177 U	0.228 U	0.131 U
1,2 Dichlorobenzene	5.1	0.0174 U	0.0182 U	0.0189 U	0.0177 U	0.0228 U	0.0131 U
4-Isopropyltoluene	NE	0.0174 U	0.677	0.0908	0.0177 U	0.0228 U	0.0131 U
Benzene	0.025	0.00870 U	0.00910 U	0.00945 U	0.00884 U	0.0114 U	0.00657 U
Ethylbenzene	6.9	0.0174 U	0.0197	0.0191	0.0177 U	0.0228 U	0.0131 U
Isopropylbenzene (Cumene)	51	0.0174 U	0.0182 U	0.0189 U	0.0177 U	0.0228 U	0.0131 U
Naphthalene	20	0.0383	0.134	0.123	0.0354 U	0.0677	0.0263 U
n-Butylbenzene	15	0.0174 U	0.0182 U	0.0189 U	0.0177 U	0.0228 U	0.0131 U
n-Propylbenzene	15	0.0174 U	0.0189	0.0189 U	0.0177 U	0.0228 U	0.0131 U
sec-Butylbenzene	12	0.0174 U	0.0479	0.0393	0.0177 U	0.0228 U	0.0131 U
Styrene	0.96	0.0174 U	0.0182 U	0.0189 U	0.0177 U	0.0228 U	0.0131 U
Tetrachloroethene (PCE)	0.024	**0.519**	**59.3**	**35.1**	**18.5**	**0.224**	**0.0412**
Trichloroethene	0.02	0.0087 U	0.0091 U	0.00945 U	0.00884 U	0.0114 U	0.00657 U
Toluene	6.5	0.0218	0.0182 U	0.0189 U	0.0177 U	0.0228 U	0.0131 U
o-Xylene	NE ***	0.0174 U	0.0989	0.162	0.0177 U	0.0228 U	0.0131 U
p & m-Xylene	NE ***	0.0348 U	0.0364 U	0.0378 U	0.0354 U	0.0456 U	0.0263 U
Xylenes (total)	63	0.0696 U	0.0989	0.162	0.0707 U	0.0911 U	0.0526 U
Glycols							
Ethylene Glycol	190	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U
Propylene Glycol	1900	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U

Notes:

# U	Analyte not detected at the listed detection limit
Shade	Analyte detected in concentration below the ADEC Cleanup level
Shade	Analyte detected in concentration above the ADEC Cleanup level
***	Cleanup level for individual analyte not established; see total xylenes
DP#	Field Duplicate Pair

Table 2
Building Perimeter Soil Samples - Detected Compounds Only
(organized by Figure Number and Soil Profile)

Building Corner		SW (South)	SW (South)	SW (South)	SW (South)	SW (South)	SW (South)
Figure Number		B9	B9	B9	B9	B9	B9
Structural Prism/Exterior		Prism	Prism	Prism	Ext	Prism	Ext
Profile ID/Figure Number		F/B10	F/B10	F/B10	F/B10	F/B10	F/B10
Sample ID	**ADEC** Cleanup Level	**WS-SC47**	**(BP)WS-SC44**	**BP-SC157**	**BP-SC161**	**BP-SC158**	**BP-SC156**
Duplicate Pair (if #'d)							
Work Order		1118921	1118921	1119647	1119647	1119647	1119647
PID	ppm	9.2	18.5	17	13.9	19.7	7.5
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Petroleum Fractions							
GRO	300	1.4 U	2.37	1.73 U	1.46 U	3.41	1.28 U
DRO	250	20.8 U	**1700**	**5930**	39	**9480**	37.7
RRO	11000	42	9760	**30900**	263	**57000**	242
VOCs							
1,2,4-Trimethylbenzene	23	0.0279 U	0.0536	0.0347 U	0.0292 U	0.0829	0.0257 U
1,3,5-Trimethylbenzene	23	0.014 U	0.0184	0.0175	0.0146 U	0.0358	0.0128 U
2-Butanone (MEK)	59	0.14 U	0.166 U	0.173 U	0.146 U	0.178	0.128 U
1,2 Dichlorobenzene	5.1	0.014 U	0.0166 U	0.0173 U	0.0146 U	0.015 U	0.0128 U
4-Isopropyltoluene	NE	0.014 U	0.0166 U	0.027	0.0146 U	0.0274	0.0128 U
Benzene	0.025	0.00698 U	0.0083 U	0.00867 U	0.00729 U	0.00752 U	0.00642 U
Ethylbenzene	6.9	0.014 U	0.0473	0.0173 U	0.0146 U	0.0522	0.0128 U
Isopropylbenzene (Cumene)	51	0.014 U	0.0166 U	0.0173 U	0.0146 U	0.0179	0.0128 U
Naphthalene	20	0.0279 U	0.191	0.0347 U	0.0292 U	0.74	0.0257 U
n-Butylbenzene	15	0.014 U	0.0166 U	0.0173 U	0.0146 U	0.015 U	0.0128 U
n-Propylbenzene	15	0.014 U	0.0166 U	0.0173 U	0.0146 U	0.0283	0.0128 U
sec-Butylbenzene	12	0.014 U	0.0166 U	0.0173 U	0.0146 U	0.0176	0.0128 U
Styrene	0.96	0.014 U	0.0166 U	0.0173 U	0.0146 U	0.0417	0.0128 U
Tetrachloroethene (PCE)	0.024	0.00698 U	**0.482**	**0.118**	0.00817	**0.777**	0.0118
Trichloroethene	0.02	0.00698 U	0.0083 U	0.00867 U	0.00729 U	0.00752 U	0.00642 U
Toluene	6.5	0.014 U	0.275	0.0173 U	0.0146 U	0.189	0.0128 U
o-Xylene	NE ***	0.014 U	0.0782	0.0238	0.0146 U	0.111	0.0128 U
p & m-Xylene	NE ***	0.0279 U	0.22	0.0347 U	0.0292 U	0.21	0.0257 U
Xylenes (total)	63	0.0558 U	0.298	0.0694 U	0.0584 U	0.322	0.0513 U
Glycols							
Ethylene Glycol	190	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U
Propylene Glycol	1900	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U

Notes:

# U	Analyte not detected at the listed detection limit
Shade	Analyte detected in concentration below the ADEC Cleanup level
Shade	Analyte detected in concentration above the ADEC Cleanup level
***	Cleanup level for individual analyte not established; see total xylenes
DP#	Field Duplicate Pair

Table 2
Building Perimeter Soil Samples - Detected Compounds Only
(organized by Figure Number and Soil Profile)

Building Corner		SW (West)	SW (West)	SW (West)	SW (West)	SW (West)
Figure Number		B9	B9	B9	B9	B9
Structural Prism/Exterior		Prism	Prism	Prism	Prism	Ext
Profile ID/Figure Number		None	None	None	None	None
Sample ID	**ADEC** Cleanup Level	**BP-SC131**	**BP-SC132**	**BP-SC162**	**BP-SC163**	**BP-SC159**
Duplicate Pair (if #'d)				DP25	DP25	
Work Order		1119647	1119647	1119647	1119647	1119647
PID	ppm	24.6	9.1	37.2	37.2	11.5
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Petroleum Fractions						
GRO	300	1.76 U	1.65 U	1.64 U	1.79 U	1.6 U
DRO	250	**567**	20.6 U	**3240**	**3330**	100
RRO	11000	2770	61.8	**18100**	**18700**	194
VOCs						
1,2,4-Trimethylbenzene	23	0.0351 U	0.033 U	0.0327 U	0.0359 U	0.032 U
1,3,5-Trimethylbenzene	23	0.0176 U	0.0165 U	0.0164 U	0.0179 U	0.016 U
2-Butanone (MEK)	59	0.176 U	0.165 U	0.164 U	0.179 U	0.16 U
1,2 Dichlorobenzene	5.1	0.0176 U	0.0165 U	0.0164 U	0.0179 U	0.016 U
4-Isopropyltoluene	NE	0.0176 U	0.0165 U	0.0255	0.0305	0.016 U
Benzene	0.025	0.00878 U	0.00826 U	0.00818 U	0.00897 U	0.008 U
Ethylbenzene	6.9	0.0176 U	0.0165 U	0.0164 U	0.0179 U	0.016 U
Isopropylbenzene (Cumene)	51	0.0176 U	0.0165 U	0.0164 U	0.0179 U	0.016 U
Naphthalene	20	0.0351 U	0.033 U	0.0327 U	0.0359 U	0.032 U
n-Butylbenzene	15	0.0176 U	0.0165 U	0.0164 U	0.0179 U	0.016 U
n-Propylbenzene	15	0.0176 U	0.0165 U	0.0164 U	0.0179 U	0.016 U
sec-Butylbenzene	12	0.0176 U	0.0165 U	0.0164 U	0.0179 U	0.016 U
Styrene	0.96	0.0176 U	0.0165 U	0.0164 U	0.0179 U	0.016 U
Tetrachloroethene (PCE)	0.024	0.00878 U	0.00826 U	**0.17**	**0.186**	0.008 U
Trichloroethene	0.02	0.00931	0.00826 U	0.00818 U	0.00897 U	0.008 U
Toluene	6.5	0.0176 U	0.0165 U	0.0164 U	0.0179 U	0.016 U
o-Xylene	NE ***	0.0176 U	0.0165 U	0.0164 U	0.0179 U	0.016 U
p & m-Xylene	NE ***	0.0351 U	0.033 U	0.0327 U	0.0359 U	0.032 U
Xylenes (total)	63	0.0703 U	0.0661 U	0.0654 U	0.0717 U	0.064 U
Glycols						
Ethylene Glycol	190	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U
Propylene Glycol	1900	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U

Notes:

# U	Analyte not detected at the listed detection limit
Shade	Analyte detected in concentration below the ADEC Cleanup level
Shade	Analyte detected in concentration above the ADEC Cleanup level
***	Cleanup level for individual analyte not established; see total xylenes
DP#	Field Duplicate Pair

Table 2
Building Perimeter Soil Samples - Detected Compounds Only
(organized by Figure Number and Soil Profile)

Building Corner		SW (West)	SW (West)	SW (West)	SW (West)	SW (West)	SW (West)	SW (West)
Figure Number		B13	B13	B13	B13	B13	B13	B13
Structural Prism/Exterior		Prism	Prism	Prism	Prism	Ext	Prism	Ext
Profile ID/Figure Number		G/12	G/12	G/12	G/12	G/12	None	None
Sample ID	**ADEC** Cleanup Level	**BP-SC139**	**BP-SC140**	**BP-SC141**	**BP-SC164**	**BP-SC160**	**BP-SC138**	**(BP) WD-SC137**
Duplicate Pair (if #'d)			DP23	DP23				
Work Order		1119647	1119647	1119647	1119647	1119647	1119647	1119647
PID	ppm	7.4	27.3	27.3	19.3	8.8	4.4	5.6
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Petroleum Fractions								
GRO	300	1.38 U	1.67 U	1.8 U	3.98	1.56 U	1.65 U	1.55 U
DRO	250	43.5	**1950**	**1600**	**6280**	120	20.7 U	20.4 U
RRO	11000	215	9470	7900	**31200**	578	26.6	20.4 U
VOCs								
1,2,4-Trimethylbenzene	23	0.0275 U	0.0333 U	0.036 U	0.0354 U	0.0312 U	0.0329 U	0.0309 U
1,3,5-Trimethylbenzene	23	0.0138 U	0.0307	0.0355	0.0574	0.0156 U	0.0165 U	0.0155 U
2-Butanone (MEK)	59	0.138 U	0.167 U	0.180 U	0.177 U	0.156 U	0.165 U	0.115 U
1,2 Dichlorobenzene	5.1	0.0138 U	0.0167 U	0.018 U	0.0177 U	0.0156 U	0.0165 U	0.0155 U
4-Isopropyltoluene	NE	0.0138 U	0.0167 U	0.022	0.0198	0.0156 U	0.0165 U	0.0155 U
Benzene	0.025	0.00688 U	0.00833 U	0.009 U	0.00886 U	0.0078 U	0.00824 U	0.00773 U
Ethylbenzene	6.9	0.0138 U	0.0167 U	0.018 U	0.0177 U	0.0156 U	0.0165 U	0.0155 U
Isopropylbenzene (Cumene)	51	0.0138 U	0.0167 U	0.018 U	0.0177 U	0.0156 U	0.0165 U	0.0155 U
Naphthalene	20	0.0275 U	0.112	0.0553	0.0964	0.0312 U	0.0329 U	0.0309 U
n-Butylbenzene	15	0.0138 U	0.0167 U	0.018 U	0.0177 U	0.0156 U	0.0165 U	0.0155 U
n-Propylbenzene	15	0.0138 U	0.0167 U	0.018 U	0.0177 U	0.0156 U	0.0165 U	0.0155 U
sec-Butylbenzene	12	0.0138 U	0.0167 U	0.018 U	0.0177 U	0.0156 U	0.0165 U	0.0155 U
Styrene	0.96	0.0138 U	0.0167 U	0.018 U	0.0177 U	0.0156 U	0.0165 U	0.0155 U
Tetrachloroethene (PCE)	0.024	0.00688 U	**0.122**	**0.15**	**0.145**	0.00858	0.00824 U	0.00773 U
Trichloroethene	0.02	0.00688 U	0.00833 U	0.009 U	0.00886 U	0.0078 U	0.00824U	.0155 U
Toluene	6.5	0.0138 U	0.0167 U	0.0207	0.0177 U	0.0156 U	0.0165 U	0.0155 U
o-Xylene	NE ***	0.0138 U	0.282	0.296	0.301	0.0156 U	0.0165 U	0.0618 U
p & m-Xylene	NE ***	0.0275 U	0.0333 U	0.0421	0.0354 U	0.0312 U	0.0329 U	0.0618 U
Xylenes (total)	63	0.0551 U	0.311	0.338	0.329	0.0624 U	0.0659 U	0.0618 U
Glycols								
Ethylene Glycol	190	7.3	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2.0 U
Propylene Glycol	1900	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2.0 U

Notes:

# U	Analyte not detected at the listed detection limit
Shade	Analyte detected in concentration below the ADEC Cleanup level
Shade	Analyte detected in concentration above the ADEC Cleanup level
***	Cleanup level for individual analyte not established; see total xylenes
DP#	Field Duplicate Pair

Table 3
West Ditch and Building Perimeter Metals

Sample ID	ADEC	WD-SC120	WD-SC127	BP-SC162	BP-SC163	
	Cleanup Level	West Ditch, DP21	West Ditch, DP21	SW Bldg. Per., DP25	SW Bldg. Per., DP25	
Work Order		1119647	1119647	1119647	1119647	
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	
Documented Contaminants of Concern						
DRO	250	145	103	3240	3330	
RRO	11000	740	574	18100	18700	
PCE	0.024	0.0117	0.0144 U	0.17	0.186	
Benzene	0.025	0.00885 U	0.0719 U	0.00818	0.00897	
TAL 23 Metals						Fairbanks Background
Aluminum	NE	5720	5690	5890	5430	NE
Antimony	3.6	0.103 U	0.0995 U	0.103 U	0.107 U	NE
Arsenic	3.9	3.33	3.12	2.73	3.52	14
Barium	1100	66.8	61.8	72.3	53.1	115
Beryllium	42.0	0.103 U	0.0995 U	0.12	0.107 U	NE
Cadmium	5.0	0.205 U	0.199 U	0.206 U	0.214 U	1.8
Calcium	NE	2730	2490	2720	2450	NE
Chromium (tot)	25	10.6	9.84	10.7	8.78	19
Cobalt	NE	4.99	4.57	5.26	4.46	NE
Copper	460	14.3	13.1	12.8	13.6	NE
Iron	NE	9990	9570	10300	9940	NE
Lead	400	3.98	3.7	3.74	3.65	26
Magnesium	NE	3710	3530	3790	3270	NE
Manganese	NE	204	190	198	181	NE
Nickel	86	14.8	14.4	14.7	12.8	NE
Potassium	NE	538	520	478	532	NE
Selenium	3.4	0.514 U	0.497 U	0.514 U	0.535 U	NE
Silver	11.2	0.103 U	0.0995 U	0.103 U	0.107 U	NE
Sodium	NE	185	165	166	194	NE
Thallium	1.9	0.0369	0.0395	0.0317	0.036	NE
Vanadium	3400	19.2	18.3	20.8	17.7	NE
Zinc	4100	27.6	25.5	43.3	41.9	NE

Notes:

# U	Analyte not detected at the listed detection limit
Shade	Analyte detected in concentration below the ADEC cleanup level
DP#	Field Duplicate Pair
NE	Cleanup &/or Fbks Background Level for Analyte not established

Table 4
Site Characterization Groundwater Samples
Monitoring Wells - Detected Compounds Only

Sample ID	ADEC	MW01	MW02	MW31	GW-HW1	MW1A	MW1B	MW2B	
	Cleanup Level	West Ditch	West Ditch, DP4	West Ditch, DP4	West Adj. Property	West Ditch	West Ditch	West Ditch	
Sample Date Collected		6/13/11	6/13/11	6/13/11	6/20/11	6/30/11	9/29/11	9/29/11	
Work Order		1118395	1118395	1118395	1118426	1118455	1118928	1118928	
Analyte	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	
Petroleum Fractions									
GRO	2.2	0.100 U	0.100 U	0.100 U	0.100 U	NA	1.18	0.704	
DRO	1.5	0.800 U	0.800 U	0.800 U	0.800 U	NA	**13.6**	**15.1**	
RRO	1.1	0.500 U	0.500 U	0.500 U	0.500 U	NA	0.644	0.714	
VOCs									
1,2,4-Trimethylbenzene	1.8	0.001 U	0.001 U	0.001 U	0.001 U	NA	0.001 U	0.001 U	
1,3,5-Trimethylbenzene	1.8	0.001 U	0.001 U	0.001 U	0.001 U	NA	0.001 U	0.001 U	
2 Butanone (MEK)	22	0.0957	0.100	0.125	0.01 U	NA	0.762	0.21	
2-Hexanone	NE	0.01 U	0.01 U	0.01 U	0.01 U	NA	0.0128	0.01 U	
4-Isopropyltoluene	NE	0.001 U	0.001 U	0.001 U	0.01 U	NA	0.001 U	0.001 U	
4-Methyl-2-pentanone (MIBK)	2.9	0.0326	0.0313	0.0343	0.01 U	NA	1.9	0.151	
Benzene	0.005	0.0004 U	0.00134	0.00158	0.0004 U	NA	**0.0536**	**0.0271**	
Chloroform	0.14	0.001	0.001 U	0.001 U	0.001 U	NA	0.001 U	0.001 U	
Ethylbenzene	0.7	0.001 U	0.001 U	0.001 U	0.001 U	NA	0.02	0.0237	
Isopropylbenzene (Cumene)	3.7	0.001 U	0.001 U	0.001 U	0.001 U	NA	0.001 U	0.001 U	
Methylene chloride	0.005	0.005 U	0.005 U	0.005 U	0.005 U	NA	**0.0137**	**0.0172**	
Naphthalene	0.73	0.002 U	0.002 U	0.002 U	0.002 U	NA	0.002 U	0.00342	
n-Butylbenzene	0.4	0.001 U	0.001 U	0.001 U	0.001 U	NA	0.001 U	0.001 U	
n-Propylbenzene	0.37	0.001 U	0.001 U	0.001 U	0.001 U	NA	0.00617	0.001 U	
sec-Butylbenzene	0.37	0.001 U	0.001 U	0.001 U	0.001 U	NA	0.001 U	0.001 U	
Styrene	0.1	0.001 U	0.001 U	0.001 U	0.001 U	NA	0.001 U	0.0046	
Tetrachloroethene	0.005	0.001 U	0.001 U	0.001 U	0.001 U	NA	0.001 U	0.00151	
Toluene	1.0	0.001 U	0.00122	0.00135	0.001 U	NA	0.121	0.121	
o-Xylene	NE ***	0.001 U	0.001 U	0.001 U	0.001 U	NA	0.0213	0.0274	
p & m-Xylene	NE ***	0.002 U	0.002 U	0.002 U	0.002 U	NA	0.0512	0.069	
Xylenes (total)	10	0.003 U	0.003 U	0.003 U	0.003 U	NA	0.0726	0.0964	
Glycols									
Ethylene Glycol	73	30	<2 U	<2 U	<2 U	**170**	<2 U	<2 U	
Propylene Glycol	730	23	<2 U	<2 U	<2 U	140	<2 U	<2 U	Fairbanks
TAL 23 Metals									Background
Aluminum	NE	NA	NA	NA	0.500 U	NA	NA	NA	NE
Antimony	0.006	NA	NA	NA	0.001 U	NA	NA	NA	NE
Arsenic	0.01	NA	NA	NA	0.005 U	NA	NA	NA	0.072
Barium	2.0	NA	NA	NA	0.261	NA	NA	NA	0.988
Beryllium	0.004	NA	NA	NA	0.001 U	NA	NA	NA	NE
Cadmium	0.005	NA	NA	NA	0.002 U	NA	NA	NA	0.009
Calcium	NE	NA	NA	NA	50.4	NA	NA	NA	NE
Chromium (tot)	0.1	NA	NA	NA	0.004 U	NA	NA	NA	0.125
Cobalt	NE	NA	NA	NA	0.001 U	NA	NA	NA	NE
Copper	1	NA	NA	NA	0.006 U	NA	NA	NA	NE
Iron	NE	NA	NA	NA	22.0	NA	NA	NA	NE
Lead	0.015	NA	NA	NA	0.001 U	NA	NA	NA	0.066
Magnesium	NE	NA	NA	NA	13.2	NA	NA	NA	NE
Manganese	NE	NA	NA	NA	0.976	NA	NA	NA	NE
Mercury	0.002	NA	NA	NA	0.0002 U	NA	NA	NA	NE
Nickel	0.1	NA	NA	NA	0.00253 U	NA	NA	NA	NE
Potassium	NE	NA	NA	NA	3.87	NA	NA	NA	NE
Selenium	0.05	NA	NA	NA	0.005 U	NA	NA	NA	NE
Silver	0.1	NA	NA	NA	0.002 U	NA	NA	NA	NE
Sodium	NE	NA	NA	NA	10.6	NA	NA	NA	NE
Thallium	0.002	NA	NA	NA	0.0025 U	NA	NA	NA	NE
Vanadium	0.26	NA	NA	NA	0.020 U	NA	NA	NA	NE
Zinc	5	NA	NA	NA	0.203	NA	NA	NA	NE
SVOCs									
2,4-Dimethylphenol	0.73	0.0100 U	0.0100 U	0.0100 U	0.0100 U	NA	NA	NA	
2-Methylphenol (o-Cresol)	1.8	0.0100 U	0.0100 U	0.0100 U	0.0100 U	NA	NA	NA	
3&4 Methylphenol (p&m-Cresol)	NE**	0.0200 U	0.0200 U	0.0200 U	0.0200 U	NA	NA	NA	
Aniline	NE	0.0500 U	0.0500 U	0.0500 U	0.0500 U	NA	NA	NA	
Benzoic Acid	150	0.0500 U	0.0500 U	0.0500 U	0.0500 U	NA	NA	NA	
Benzyl Alcohol	NE	0.0100 U	0.0100 U	0.0100 U	0.0100 U	NA	NA	NA	
Phenol	11.0	0.0100 U	0.0237	0.0195	0.0100 U	NA	NA	NA	

Notes:

# U	Analyte not detected at the listed detection limit
NA	Analyte not analyzed for
Shade	Analyte detected in concentration below the ADEC Cleanup level
Shade	Analyte detected in concentration exceeding the ADEC Cleanup level
NE	Cleanup &/or Fbks Background Level for Analyte not established
***	Cleanup level for individual analyte not established; see total xylenes
**	Cleanup levels established for individual analytes

Table 4
Site Characterization Groundwater Samples
Temporary Sampling Points - Compounds Detected in MWs Only

Sample ID	ADEC	SE-TSP3	S-TSP4	TSP5	N-TSP6	NE-TSP7	W-TSP8	W-TSP9	NW-TSP10	
Sample Date Collected	Cleanup Level	SE Ditch 9/27/11	South Ditch 9/27/11	East RAP & Strc Pad 9/27/11	North Ditch 9/28/11	NE Ditch 9/28/11	W Ditch, DP12 9/28/11	W Ditch, DP12 9/28/11	NW Ditch 9/28/11	
Work Order		1118928	1118928	1118928	1118928	1118928	1118928	1118928	1118928	
Analyte	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	
Petroleum Fractions										
GRO	2.2	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	
DRO	1.5	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	
RRO	1.1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	
VOCs										
1,2,4-Trimethylbenzene	1.8	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	
1,3,5-Trimethylbenzene	1.8	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	
2 Butanone (MEK)	22	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	
2-Hexanone	NE	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	
4-Isopropyltoluene	NE	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	
4-Methyl-2-pentanone (MIBK)	2.9	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	
Benzene	0.005	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	
Chloroform	0.14	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	
Ethylbenzene	0.7	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	
Isopropylbenzene (Cumene)	3.7	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	
Methylene chloride	0.005	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	
Naphthalene	0.73	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	
n-Butylbenzene	0.4	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	
n-Propylbenzene	0.37	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	
sec-Butylbenzene	0.37	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	
Styrene	0.1	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	
Tetrachloroethene	0.005	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	
Toluene	1.0	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	
o-Xylene	NE ***	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	
p & m-Xylene	NE ***	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	
Xylenes (total)	10	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	
Glycols										
Ethylene Glycol	73	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	
Propylene Glycol	730	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	Fairbanks
TAL 23 Metals										Background
Aluminum	NE	NA	NA	NA	NA	NA	NA	NA	NA	NE
Antimony	0.006	NA	NA	NA	NA	NA	NA	NA	NA	NE
Arsenic	0.01	NA	NA	NA	NA	NA	NA	NA	NA	0.072
Barium	2.0	NA	NA	NA	NA	NA	NA	NA	NA	0.988
Beryllium	0.004	NA	NA	NA	NA	NA	NA	NA	NA	NE
Cadmium	0.005	NA	NA	NA	NA	NA	NA	NA	NA	0.009
Calcium	NE	NA	NA	NA	NA	NA	NA	NA	NA	NE
Chromium (tot)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	0.125
Cobalt	NE	NA	NA	NA	NA	NA	NA	NA	NA	NE
Copper	1	NA	NA	NA	NA	NA	NA	NA	NA	NE
Iron	NE	NA	NA	NA	NA	NA	NA	NA	NA	NE
Lead	0.015	NA	NA	NA	NA	NA	NA	NA	NA	0.066
Magnesium	NE	NA	NA	NA	NA	NA	NA	NA	NA	NE
Manganese	NE	NA	NA	NA	NA	NA	NA	NA	NA	NE
Mercury	0.002	NA	NA	NA	NA	NA	NA	NA	NA	NE
Nickel	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NE
Potassium	NE	NA	NA	NA	NA	NA	NA	NA	NA	NE
Selenium	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NE
Silver	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NE
Sodium	NE	NA	NA	NA	NA	NA	NA	NA	NA	NE
Thallium	0.002	NA	NA	NA	NA	NA	NA	NA	NA	NE
Vanadium	0.26	NA	NA	NA	NA	NA	NA	NA	NA	NE
Zinc	5	NA	NA	NA	NA	NA	NA	NA	NA	NE
SVOCs										
2,4-Dimethylphenol	0.73	NA	NA	NA	NA	NA	NA	NA	NA	
2-Methylphenol (o-Cresol)	1.8	NA	NA	NA	NA	NA	NA	NA	NA	
3&4 Methylphenol (p&m-Cresol)	NE**	NA	NA	NA	NA	NA	NA	NA	NA	
Aniline	NE	NA	NA	NA	NA	NA	NA	NA	NA	
Benzoic Acid	150	NA	NA	NA	NA	NA	NA	NA	NA	
Benzyl Alcohol	NE	NA	NA	NA	NA	NA	NA	NA	NA	
Phenol	11.0	NA	NA	NA	NA	NA	NA	NA	NA	

Notes:

# U	Analyte not detected at the listed detection limit
NA	Analyte not analyzed for
Shade	Analyte detected in concentration below the ADEC Cleanup level
Shade	Analyte detected in concentration exceeding the ADEC Cleanup level
NE	Cleanup &/or Fbks Background Level for Analyte not established
***	Cleanup level for individual analyte not established; see total xylenes
**	Cleanup levels established for individual analytes

Table 5
Soil Boring Soil Samples - Detected Compounds Only
Building Perimeter - West Side, Southwest Corner (Section 6.4.4)

Sample ID	**ADEC** Cleanup Level	**B4 2-4**	**B4 4-6**	**B4 6-7**	**B4 10-11**	**B4 13-14**	**B5 2-4**	
		West Side, DP2	West Side Building	West Side Building	West Side Building	West Side Building	West Side, DP2	
Work Order		1118380	118380	118380	1118380	1118380	1118380	
PID (ppm)		101	10.2	50.4	22.7	1.3	101	
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	
Petroleum Fractions								
GRO	300	1.96 U	1.96 U	1.96 U	1.96 U	1.96 U	1.96 U	
DRO	250	**1,980**	26.3	184	73.8	206 U	**3,340**	
RRO	11000	**12,000**	40.9	1,090	43.8	1030 U	**18,900**	
VOCs								
1,2,4-Trimethylbenzene	23	0.0392 U	0.0358 U	0.0215 U	0.0479 U	0.0315 U	0.0259 U	
1,3,5-Trimethylbenzene	23	0.0196 U	0.0179 U	0.0108 U	0.024 U	0.0158 U	0.0129 U	
2-Butanone (MEK)	59	0.196 U	0.179 U	0.108 U	0.240 U	0.158 U	0.129 U	
2-Chlorotoluene	NE	0.0196 U	0.0179 U	0.0108 U	0.0240 U	0.0158 U	0.0129 U	
4-Isopropyltoluene	NE	0.0603	0.0179 U	0.0108 U	0.024 U	0.0158 U	0.0382	
4-Methyl-2-pentanone (MIBK)	8.1	0.196 U	0.179 U	0.108 U	0.240 U	0.158 U	0.129 U	
Benzene	0.025	**0.0253**	0.00895 U	0.00538 U	0.012 U	0.00788 U	0.0115	
Chloroform	0.46	0.0196 U	0.0179 U	0.0108 U	0.024 U	0.0158 U	0.0129 U	
Chloromethane	0.21	0.0196 U	0.0179 U	0.0108 U	0.024 U	0.0158 U	0.0129 U	
Ethylbenzene	6.9	0.0431	0.0179 U	0.0108 U	0.024 U	0.0158 U	0.0213	
Isopropylbenzene (Cumene)	51	0.0196 U	0.0179 U	0.0108 U	0.024 U	0.0158 U	0.0129 U	
Naphthalene	20	3.14	0.213	0.114	0.0896	0.0315 U	1.400	
n-Butylbenzene	15	0.551	0.0179 U	0.0271	0.024 U	0.0158 U	0.329	
n-Propylbenzene	15	0.0196 U	0.0179 U	0.0108 U	0.024 U	0.0158 U	0.0129 U	
sec-Butylbenzene	12	0.0196 U	0.0179 U	0.0108 U	0.024 U	0.0158 U	0.0129 U	
Styrene	0.96	0.0652	0.0179 U	0.0108 U	0.024 U	0.0158 U	0.0329	
tert-Butylbenzene	12	0.0196 U	0.0179 U	0.0108 U	0.024 U	0.0158 U	0.0129 U	
Tetrachloroethene	0.024	**0.0873**	0.00895 U	0.00538 U	0.012 U	0.00788 U	**0.0348**	
Toluene	6.5	0.182	0.0358 U	0.0215 U	0.0479 U	0.0315 U	0.0917	
o-Xylene	NE ***	0.0392 U	0.0358 U	0.0215 U	0.0479 U	0.0315 U	0.0259 U	
p & m-Xylene	NE ***	0.124	0.0358 U	0.0215 U	0.0479 U	0.0315 U	0.0638	
Xylenes (total)	63	0.159	0.0716 U	0.0431 U	0.0958 U	0.063 U	0.0809	
Glycols								
Ethylene Glycol	190	<2 U	<2 U	20	**290**	<2 U	<2 U	
Propylene Glycol	1900	<2 U	<2 U	<2 U	16	<2 U	<2 U	Fairbanks Background
TAL 23 Metals								
Aluminum	NE	3770	4600	3660	7240	5680	4550	NE
Antimony	3.6	0.102 U	0.119	0.133	0.102 U	0.102 U	0.102 U	NE
Arsenic	3.9	2.55	3.37	3.48	**6.72**	1.60	**4.12**	14
Barium	1100	53.4	54.8	47.7	85.6	61.3	64.1	115
Beryllium	42	0.102 U	0.102 U	0.102 U	0.124	0.102 U	0.102 U	NE
Cadmium	5	0.204 U	0.205 U	0.200 U	0.235 U	0.220 U	0.200 U	1.8
Calcium	NE	1810	2150	1650	3480	2710	2020	NE
Chromium (tot)	25	8.76	11.2	**107 ***	16.1	12.40	10.5	19
Cobalt	NE	3.43	4.07	3.64	6.56	5.47	4.71	NE
Copper	460	9.69	13.5	13.6	22.6	15.90	12.1	NE
Iron	NE	6950	8770	9780	14500	9820	9010	NE
Lead	400	3.2	3.84	3.21	5.58	4.59	3.61	26
Magnesium	NE	2510	3260	2310	4270	3490	2880	NE
Manganese	NE	139	176	152	238	121	178	NE
Mercury	1.4	0.0408 U	0.0413 U	0.0402 U	0.0483 U	0.0440 U	0.0404 U	NE
Nickel	86	10.4	12	16.1	18.1	15.80	12.9	NE
Potassium	NE	377	517	432	779	516	408	NE
Selenium	3.4	0.511 U	0.511 U	0.500 U	0.586 U	0.549	0.499 U	NE
Silver	11.2	0.102 U	0.102 U	0.100 U	0.117 U	0.110	0.0998 U	NE
Sodium	NE	191	175	146	283	224	172	NE
Thallium	1.9	0.0257	0.0342	0.0294	0.0542	0.0335	0.0297	NE
Vanadium	3400	13.7	19.4	1834	25.2	28.80	16.3	NE
Zinc	4100	45.3	22.3	20.6	40.2	31.20	40.3	NE
SVOCs								
2,4-Dimethylphenol	8.8	2.57 U	0.258 U	0.256 U	0.304 U	0.281 U	5.10 U	
2-Methylphenol (o-Cresol)	15	2.57 U	0.258 U	0.256 U	0.304 U	0.281 U	5.10 U	
3&4 Methylphenol (p&m-Cresol)	NE**	10.3 U	1.03 U	1.03 U	1.21 U	1.12 U	20.4 U	
Aniline	NE	20.6 U	2.06 U	2.05 U	2.43 U	2.25 U	40.8 U	
Benzoic Acid	410	15.4 U	1.55 U	1.54 U	1.82 U	1.68 U	30.6 U	
Benzyl Alcohol	NE	2.57 U	0.258 U	0.256 U	0.304 U	0.281 U	5.10 U	
Phenol	68	2.57 U	0.258 U	0.256 U	0.304 U	0.281 U	5.10 U	

Notes:

U	Analyte not detected at the listed detection limit
NA	Analyte not analyzed for
Shade	Analyte detected in concentration below the ADEC cleanup level
Shade	Analyte detected in concentration exceeding the ADEC cleanup level
NE	Cleanup &/or Fbks background level for analyte not established
***	Cleanup level for individual analyte not established; see total xylenes
**	Cleanup levels established for individual analytes
*	Cr+6 species was 0.18 U mg/kg, below the most stringent ADEC cleanup level for Cr+6 (25 mg/kg)
DP#	Field Duplicate Pair

Table 5
Soil Boring Soil Samples - Detected Compounds Only
Building Perimeter - East Side, Southeast Corner (Section 6.4.3)

Sample ID	ADEC Cleanup Level	B6 0-3	B6 4.5-6	B6 10-12	B7 11-12	B7 9-10	SB18-SC52	Fairbanks Background
		East Side Building	East Side Building	East Side Building	East Side Building	East Side Building	East Side Building	
Work Order		1118380	1118380	1118380	1118394	1118394	1118921	
PID (ppm)		18.9	4.4	24.6	9.2	14.7	1.8	
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	
Petroleum Fractions								
GRO	300	54	1.96 U	1.96 U	2.93 U	1.83 U	2.89 U	
DRO	250	3,980	23.7	206 U	24.4 U	22.1 U	25.2 U	
RRO	11000	25,700	23.5	1,030 U	24.4 U	23.9	25.2 U	
VOCs								
1,2,4-Trimethylbenzene	23	5.91	0.0692 U	0.0836 U	0.0586 U	0.0183 U	0.0577 U	
1,3,5-Trimethylbenzene	23	1.6	0.0346 U	0.0418 U	0.0293 U	0.0183 U	0.0289 U	
2-Butanone (MEK)	59	0.377 U	0.346 U	1.12	0.366	0.248	0.289 U	
2-Chlorotoluene	NE	0.0377 U	0.0346 U	0.0418 U	0.0293 U	0.0183 U	0.0289 U	
4-Isopropyltoluene	NE	0.652	0.0346 U	0.0418 U	0.0293 U	0.0183 U	0.0289 U	
4-Methyl-2-pentanone (MIBK)	8.1	0.377 U	0.346 U	0.418 U	0.293 U	0.183 U	0.289 U	
Benzene	0.025	0.19	0.0173 U	0.0209 U	0.0146 U	0.00915 U	0.0144 U	
Chloroform	0.46	0.0377 U	0.0346 U	0.0418 U	0.0293 U	0.0183 U	0.0289 U	
Chloromethane	0.21	0.0377 U	0.346 U	0.0418 U	0.0293 U	0.0183 U	0.0289 U	
Ethylbenzene	6.9	1.95	0.0346 U	0.0418 U	0.0293 U	0.0183 U	0.0289 U	
Isopropylbenzene (Cumene)	51	0.32	0.0346 U	0.0418 U	0.0293 U	0.0183 U	0.0289 U	
Naphthalene	20	1.67	0.409	0.0836 U	0.0586 U	0.0366 U	0.0577 U	
n-Butylbenzene	15	0.718	0.0346 U	0.0418 U	0.0293 U	0.0183 U	0.0289 U	
n-Propylbenzene	15	1.09	0.0346 U	0.0418 U	0.0293 U	0.0183 U	0.0289 U	
sec-Butylbenzene	12	0.284	0.0346 U	0.0418 U	0.0293 U	0.0183 U	0.0289 U	
Styrene	0.96	0.225	0.0346 U	0.0418 U	0.0293 U	0.0183 U	0.0289 U	
tert-Butylbenzene	12	0.0377 U	0.0346 U	0.0418 U	0.0293 U	0.0183 U	0.0289 U	
Tetrachloroethene	0.024	5.9	0.0173 U	0.0209 U	0.0146 U	0.00915 U	0.0144 U	
Toluene	6.5	9.1	0.0692 U	0.0836 U	0.0586 U	0.0366 U	0.0289 U	
o-Xylene	NE ***	1.94	0.0692 U	0.0836 U	0.0586 U	0.0366 U	0.0289 U	
p & m-Xylene	NE ***	4.35	0.0692 U	0.0836 U	0.0586 U	0.0366 U	0.0577 U	
Xylenes (total)	63	6.29	0.138 U	0.167 U	0.117 U	0.0732 U	0.115 U	
Glycols								
Ethylene Glycol	190	17	7.3	19	39	28	<2 U	
Propylene Glycol	1900	<2 U	<2 U	22	41	110	<2 U	
TAL 23 Metals								
Aluminum	NE	4620	5000	6430	NA	NA	NA	NE
Antimony	3.6	0.102 U	0.0989 U	0.114 U	NA	NA	NA	NE
Arsenic	3.9	3.45	3.49	1.88	NA	NA	NA	14
Barium	1100	47.7	69.2	61.4	NA	NA	NA	115
Beryllium	42	0.102 U	0.0989 U	0.114 U	NA	NA	NA	NE
Cadmium	5	0.203 U	0.198 U	0.228 U	NA	NA	NA	1.8
Calcium	NE	2110	2210	2980	NA	NA	NA	NE
Chromium (tot)	25	9.75	12.2	11.7	NA	NA	NA	19
Cobalt	NE	3.96	4.34	4.73	NA	NA	NA	NE
Copper	460	10.3	13.3	17.5	NA	NA	NA	NE
Iron	NE	8180	8720	9790	NA	NA	NA	NE
Lead	400	3.47	3.47	3.71	NA	NA	NA	26
Magnesium	NE	2860	3110	3760	NA	NA	NA	NE
Manganese	NE	141	156	108	NA	NA	NA	NE
Mercury	1.4	0.0406 U	0.0404 U	0.0469 U	NA	NA	NA	NE
Nickel	86	11.7	12.8	14.7	NA	NA	NA	NE
Potassium	NE	508	627	516	NA	NA	NA	NE
Selenium	3.4	0.508 U	0.494 U	0.571 U	NA	NA	NA	NE
Silver	11.2	0.102 U	0.0989 U	0.114 U	NA	NA	NA	NE
Sodium	NE	206	200	260	NA	NA	NA	NE
Thallium	1.9	0.0373	0.039	0.0354	NA	NA	NA	NE
Vanadium	3400	16.4	18.5	26.5	NA	NA	NA	NE
Zinc	4100	49.2	22.5	30	NA	NA	NA	NE
SVOCs								
2,4-Dimethylphenol	8.8	6.11 U	0.256 U	0.299 U	0.308 U	0.276 U	NA	
2-Methylphenol (o-Cresol)	15	6.11 U	0.256 U	0.299 U	0.308 U	0.276 U	NA	
3&4 Methylphenol (p&m-Cresol)	NE**	24.4 U	1.02 U	1.20 U	1.23 U	1.10 U	NA	
Aniline	NE	48.9 U	2.04 U	2.39 U	2.46 U	2.21 U	NA	
Benzoic Acid	410	36.7 U	1.53 U	1.79 U	1.85 U	1.66 U	NA	
Benzyl Alcohol	NE	6.11 U	0.256 U	0.299 U	0.308 U	0.276 U	NA	
Phenol	68	6.11 U	0.256 U	0.299 U	0.308 U	0.276 U	NA	

Notes:

U	Analyte not detected at the listed detection limit
NA	Analyte not analyzed for
Shade	Analyte detected in concentration below the ADEC cleanup level
Shade	Analyte detected in concentration exceeding the ADEC cleanup level
NE	Cleanup &/or Fbks background level for analyte not established
***	Cleanup level for individual analyte not established; see total xylenes
**	Cleanup levels established for individual analytes
DP#	Field Duplicate Pair

Table 5
Soil Boring Soil Samples - Detected Compounds Only
Building Perimeter - East Side (Section 6.4.2, 6.4.3)

Sample ID	**ADEC** Cleanup Level	**B8 6.5-7.5**	**B8 9.5-10.5**	**B9 2-4**	**B9 7-9**	**B9 10-11**	**B5 9**
		South Side Building	South Side Building	South Side Building	South Side, DP3	South Side Building	South Side, DP3
Work Order		1118394	1118394	1118394	1118394	1118394	1118394
PID (ppm)		5.9	12.1	12.6	8.4	20.5	8
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Petroleum Fractions							
GRO	300	1.56 U	2.70 U	1.13 U	1.51 U	3.00 U	1.35 U
DRO	250	62	49	1,180	20.7 U	35.7	20.4 U
RRO	11000	311	279	7,030	20.7 U	109	20.4 U
VOCs							
1,2,4-Trimethylbenzene	23	0.0313 U	0.0539 U	0.0227 U	0.0308 U	0.0600 U	0.0270 U
1,3,5-Trimethylbenzene	23	0.0156 U	0.0270 U	0.0113 U	0.0154 U	0.0300 U	0.0135 U
2-Butanone (MEK)	59	0.156 U	0.270 U	0.113 U	0.154 U	0.353 U	0.135 U
2-Chlorotoluene	NE	0.0156 U	0.0270 U	0.0113 U	0.0154 U	0.0300 U	0.0135 U
4-Isopropyltoluene	NE	0.0156 U	0.0270 U	0.0238	0.0154 U	0.0300 U	0.0135 U
4-Methyl-2-pentanone (MIBK)	8.1	0.156 U	0.270 U	0.113 U	0.154 U	0.300 U	0.135 U
Benzene	0.025	0.00781 U	0.0135 U	0.00567 U	0.00771 U	0.0150 U	0.00674 U
Chloroform	0.46	0.0156 U	0.0270 U	0.0113 U	0.0154 U	0.0300 U	0.0135 U
Chloromethane	0.21	0.0156 U	0.0270 U	0.0113 U	0.0154 U	0.0300 U	0.0135 U
Ethylbenzene	6.9	0.0156 U	0.0270 U	0.0135	0.0154 U	0.0300 U	0.0135 U
Isopropylbenzene (Cumene)	51	0.0156 U	0.0270 U	0.0238	0.0154 U	0.0300 U	0.0135 U
Naphthalene	20	0.0313 U	0.0539 U	1.07	0.131 U	0.0600 U	0.0270 U
n-Butylbenzene	15	0.0156 U	0.0270 U	0.211	0.0154 U	0.0300 U	0.0135 U
n-Propylbenzene	15	0.0156 U	0.0270 U	0.0113 U	0.0154 U	0.0300 U	0.0135 U
sec-Butylbenzene	12	0.0156 U	0.0270 U	0.0113 U	0.0154 U	0.0300 U	0.0135 U
Styrene	0.96	0.0156 U	0.0270 U	0.0123	0.0154 U	0.0300 U	0.0135 U
tert-Butylbenzene	12	0.0156 U	0.0270 U	0.0113 U	0.0154 U	0.0300 U	0.0135 U
Tetrachloroethene	0.024	0.00781 U	0.0135 U	0.0372	0.00771 U	0.0150 U	0.00674 U
Toluene	6.5	0.0313 U	0.0539 U	0.0704	0.0308 U	0.0600 U	0.0270 U
o-Xylene	NE ***	0.0313 U	0.0539	0.0195	0.0308 U	0.0600 U	0.0270 U
p & m-Xylene	NE ***	0.0313 U	0.0539 U	0.0469	0.0308 U	0.0600 U	0.0270 U
Xylenes (total)	63	0.0625 U	0.108 U	0.0664	0.0617 U	0.120 U	0.0539 U
Glycols							
Ethylene Glycol	190	13	15	<2 U	16	640	9.9
Propylene Glycol	1900	<2 U	<2 U	<2 U	<2 U	16	<2 U
TAL 23 Metals							
Aluminum	NE	NA	NA	NA	NA	NA	NA
Antimony	3.6	NA	NA	NA	NA	NA	NA
Arsenic	3.9	NA	NA	NA	NA	NA	NA
Barium	1100	NA	NA	NA	NA	NA	NA
Beryllium	42	NA	NA	NA	NA	NA	NA
Cadmium	5	NA	NA	NA	NA	NA	NA
Calcium	NE	NA	NA	NA	NA	NA	NA
Chromium (tot)	25	NA	NA	NA	NA	NA	NA
Cobalt	NE	NA	NA	NA	NA	NA	NA
Copper	460	NA	NA	NA	NA	NA	NA
Iron	NE	NA	NA	NA	NA	NA	NA
Lead	400	NA	NA	NA	NA	NA	NA
Magnesium	NE	NA	NA	NA	NA	NA	NA
Manganese	NE	NA	NA	NA	NA	NA	NA
Mercury	1.4	NA	NA	NA	NA	NA	NA
Nickel	86	NA	NA	NA	NA	NA	NA
Potassium	NE	NA	NA	NA	NA	NA	NA
Selenium	3.4	NA	NA	NA	NA	NA	NA
Silver	11.2	NA	NA	NA	NA	NA	NA
Sodium	NE	NA	NA	NA	NA	NA	NA
Thallium	1.9	NA	NA	NA	NA	NA	NA
Vanadium	3400	NA	NA	NA	NA	NA	NA
Zinc	4100	NA	NA	NA	NA	NA	NA
SVOCs							
2,4-Dimethylphenol	8.8	1.28 U	1.47 U	5.15 U	0.255 U	0.306 U	0.257 U
2-Methylphenol (o-Cresol)	15	1.28 U	1.47 U	5.15 U	0.255 U	0.306 U	0.257 U
3&4 Methylphenol (p&m-Cresol)	NE**	5.12 U	5.87 U	20.6 U	1.02 U	1.22 U	1.03 U
Aniline	NE	10.2 U	11.7 U	41.2 U	2.04 U	2.45 U	2.06 U
Benzoic Acid	410	7.68 U	8.80 U	30.9 U	1.53 U	1.83 U	1.54 U
Benzyl Alcohol	NE	1.28 U	1.47 U	5.15 U	0.255 U	0.306 U	0.257 U
Phenol	68	1.28 U	1.47 U	5.15 U	0.255 U	0.862	0.257 U

Notes:

U	Analyte not detected at the listed detection limit
NA	Analyte not analyzed for
Shade	Analyte detected in concentration below the ADEC cleanup level
Shade	Analyte detected in concentration exceeding the ADEC cleanup level
NE	Cleanup &/or Fbks background level for analyte not established
***	Cleanup level for individual analyte not established; see total xylenes
**	Cleanup levels established for individual analytes
DP#	Field Duplicate Pair

Fairbanks background metals concentrations only shown on pages with metals results (pages 1 and 2)

Table 5
Soil Boring Soil Samples - Detected Compounds Only
West Ditch - Northern Portion (Section 6.4.5)

Sample ID	**ADEC** Cleanup Level	**B10 4.5-5.5**	**B10 6.5-8.5**	**B11 13-14**	**B12 6.5-8**	**B5(12) 6.5-8**	**B12 12.5-14.5**
		West Ditch	West Ditch	West Ditch	West Ditch, DP27	West Ditch, DP27	West Ditch
Work Order		1118394	1118394	1118394	1118394	1118394	1118394
PID (ppm)		112	4.7	3.4	105	105	9.4
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Petroleum Fractions							
GRO	300	1.71	4.67 U	3.07 U	3.40 U	3.46 U	3.74 U
DRO	250	**4,410**	34.5	25.5 U	**3,620**	**2,460**	24.9 U
RRO	11000	**19,400**	188	70.9	**16,000**	**11,500**	34.7
VOCs							
1,2,4-Trimethylbenzene	23	0.281 U	0.0934 U	0.0613 U	0.0679 U	0.0693 U	0.0747 U
1,3,5-Trimethylbenzene	23	0.141 U	0.0467 U	0.0307 U	0.0340 U	0.0346 U	0.0374 U
2-Butanone (MEK)	59	1.410 U	0.467 U	0.307 U	0.340 U	0.346 U	0.374 U
2-Chlorotoluene	NE	0.141 U	0.0467 U	0.0307 U	0.0340 U	0.0346 U	0.0374 U
4-Isopropyltoluene	NE	0.141 U	0.0467 U	0.0307 U	0.0428	0.0346 U	0.0374 U
4-Methyl-2-pentanone (MIBK)	8.1	1.410 U	0.467 U	0.307 U	0.340 U	0.346 U	0.374 U
Benzene	0.025	0.0704 U	0.0234 U	0.0153 U	0.0170 U	0.0173 U	0.0187 U
Chloroform	0.46	0.141 U	0.0467 U	0.0307 U	0.0340 U	0.0346 U	0.0374U
Chloromethane	0.21	0.141 U	0.0467 U	0.0307 U	0.0340 U	0.0346 U	0.0374 U
Ethylbenzene	6.9	0.141 U	0.0467 U	0.307 U	0.0340 U	0.0346 U	0.0374 U
Isopropylbenzene (Cumene)	51	0.141 U	0.0467 U	0.0307 U	0.0340 U	0.0346 U	0.0374 U
Naphthalene	20	2.95	0.0934 U	0.0613 U	1.57	1.73	0.0747 U
n-Butylbenzene	15	0.728	0.0467 U	0.0307 U	0.366	0.325	0.0374 U
n-Propylbenzene	15	0.141 U	0.0467 U	0.0307 U	0.0340 U	0.0346 U	0.0374 U
sec-Butylbenzene	12	0.141 U	0.0467 U	0.0307 U	0.0340 U	0.0346 U	0.0374 U
Styrene	0.96	0.141 U	0.0467 U	0.0307 U	0.0340 U	0.0346 U	0.0374 U
tert-Butylbenzene	12	0.141 U	0.0467 U	0.0307 U	0.0340 U	0.0346 U	0.0374 U
Tetrachloroethene	0.024	**0.0915**	0.0234 U	0.0153 U	**0.0486**	**0.0457**	0.0187 U
Toluene	6.5	0.281 U	0.0934 U	0.0613 U	0.188	0.119	0.0747 U
o-Xylene	NE ***	0.281 U	0.0934 U	0.0613 U	0.0679 U	0.0693 U	0.0747 U
p & m-Xylene	NE ***	0.281 U	0.0934 U	0.0613 U	0.0679 U	0.0693 U	0.0747 U
Xylenes (total)	63	0.563 U	0.187 U	0.123 U	0.136 U	0.139 U	0.149 U
Glycols							
Ethylene Glycol	190	7.1	<2 U	<2 U	<2 U	5.7	<2 U
Propylene Glycol	1900	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U
TAL 23 Metals							
Aluminum	NE	NA	NA	NA	NA	NA	NA
Antimony	3.6	NA	NA	NA	NA	NA	NA
Arsenic	3.9	NA	NA	NA	NA	NA	NA
Barium	1100	NA	NA	NA	NA	NA	NA
Beryllium	42	NA	NA	NA	NA	NA	NA
Cadmium	5	NA	NA	NA	NA	NA	NA
Calcium	NE	NA	NA	NA	NA	NA	NA
Chromium (tot)	25	NA	NA	NA	NA	NA	NA
Cobalt	NE	NA	NA	NA	NA	NA	NA
Copper	460	NA	NA	NA	NA	NA	NA
Iron	NE	NA	NA	NA	NA	NA	NA
Lead	400	NA	NA	NA	NA	NA	NA
Magnesium	NE	NA	NA	NA	NA	NA	NA
Manganese	NE	NA	NA	NA	NA	NA	NA
Mercury	1.4	NA	NA	NA	NA	NA	NA
Nickel	86	NA	NA	NA	NA	NA	NA
Potassium	NE	NA	NA	NA	NA	NA	NA
Selenium	3.4	NA	NA	NA	NA	NA	NA
Silver	11.2	NA	NA	NA	NA	NA	NA
Sodium	NE	NA	NA	NA	NA	NA	NA
Thallium	1.9	NA	NA	NA	NA	NA	NA
Vanadium	3400	NA	NA	NA	NA	NA	NA
Zinc	4100	NA	NA	NA	NA	NA	NA
SVOCs							
2,4-Dimethylphenol	8.8	5.19 U	0.336 U	0.321 U	5.74 U	5.77 U	0.310 U
2-Methylphenol (o-Cresol)	15	5.19 U	0.336 U	0.321 U	5.74 U	5.77 U	0.310 U
3&4 Methylphenol (p&m-Cresol)	NE**	20.8 U	1.34 U	1.28 U	23.0 U	23.1 U	1.24 U
Aniline	NE	41.5 U	2.69 U	2.57 U	45.9 U	46.1 U	2.48 U
Benzoic Acid	410	31.1 U	2.02 U	1.92 U	34.4 U	34.6 U	1.76 U
Benzyl Alcohol	NE	5.19 U	0.336 U	0.321 U	5.74 U	5.77 U	0.310 U
Phenol	68	5.19 U	0.336 U	0.321 U	5.74 U	5.77 U	0.310 U

Notes:

U	Analyte not detected at the listed detection limit
NA	Analyte not analyzed for
Shade	Analyte detected in concentration below the ADEC cleanup level
Shade	Analyte detected in concentration exceeding the ADEC cleanup level
NE	Cleanup &/or Fbks background level for analyte not established
***	Cleanup level for individual analyte not established; see total xylenes
**	Cleanup levels established for individual analytes
DP#	Field Duplicate Pair

Fairbanks background metals concentrations only shown on pages with metals results (pages 1 and 2)

Table 5
Soil Boring Soil Samples - Detected Compounds Only
Building Perimeter - North Side of Building (Section 6.4.2)

Sample ID	**ADEC** Cleanup Level	**B13 9-10** North Side Building	**B13 11-13** North Side Building	**B14 2-4** North Side	**B14 9-11** North Side
Work Order		1118394	1118394	1118394	1118394
PID (ppm)		20.1	49.5	7.1	6.7
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Petroleum Fractions					
GRO	300	1.42 U	1.99 U	1.19 U	3.69 U
DRO	250	21.3 U	22.1 U	20.4 U	25.9 U
RRO	11000	30.7	22.1 U	20.4 U	25.9 U
VOCs					
1,2,4-Trimethylbenzene	23	0.0283 U	0.0399 U	0.0238 U	0.0739 U
1,3,5-Trimethylbenzene	23	0.0142 U	0.0199 U	0.0119 U	0.0369 U
2-Butanone (MEK)	59	0.142 U	0.303	0.119 U	0.369 U
2-Chlorotoluene	NE	0.0142 U	0.0199 U	0.0119 U	0.0369 U
4-Isopropyltoluene	NE	0.0147	0.0199 U	0.0119 U	0.0369 U
4-Methyl-2-pentanone (MIBK)	8.1	0.142 U	0.199 U	0.119 U	0.369 U
Benzene	0.025	0.00709 U	0.00997 U	0.00594 U	0.0185 U
Chloroform	0.46	0.0142 U	0.0199 U	0.0119 U	0.0369 U
Chloromethane	0.21	0.0142 U	0.0199 U	0.0119 U	0.0369 U
Ethylbenzene	6.9	0.0142 U	0.0199 U	0.0119 U	0.0369 U
Isopropylbenzene (Cumene)	51	0.0142 U	0.0199 U	0.0119 U	0.0369 U
Naphthalene	20	0.643	0.0399 U	0.0238 U	0.0739 U
n-Butylbenzene	15	0.134	0.0199 U	0.0119 U	0.0369 U
n-Propylbenzene	15	0.0142 U	0.0199 U	0.0119 U	0.0369 U
sec-Butylbenzene	12	0.0142 U	0.0199 U	0.0119 U	0.0369 U
Styrene	0.96	0.0142 U	0.0199 U	0.0119 U	0.0369 U
tert-Butylbenzene	12	0.0142 U	0.0199 U	0.0119 U	0.0369 U
Tetrachloroethene	0.024	0.0183	0.00997 U	0.00594 U	0.0185 U
Toluene	6.5	0.0462	0.0399 U	0.0238 U	0.0739 U
o-Xylene	NE ***	0.0283 U	0.0399 U	0.0238 U	0.0739 U
p & m-Xylene	NE ***	0.0283 U	0.0399 U	0.0238 U	0.0739 U
Xylenes (total)	63	0.0567 U	0.0798 U	0.0475 U	0.148 U
Glycols					
Ethylene Glycol	190	<2 U	7.1	<2 U	5
Propylene Glycol	1900	<2 U	<2 U	<2 U	<2 U
TAL 23 Metals					
Aluminum	NE	NA	NA	NA	NA
Antimony	3.6	NA	NA	NA	NA
Arsenic	3.9	NA	NA	NA	NA
Barium	1100	NA	NA	NA	NA
Beryllium	42	NA	NA	NA	NA
Cadmium	5	NA	NA	NA	NA
Calcium	NE	NA	NA	NA	NA
Chromium (tot)	25	NA	NA	NA	NA
Cobalt	NE	NA	NA	NA	NA
Copper	460	NA	NA	NA	NA
Iron	NE	NA	NA	NA	NA
Lead	400	NA	NA	NA	NA
Magnesium	NE	NA	NA	NA	NA
Manganese	NE	NA	NA	NA	NA
Mercury	1.4	NA	NA	NA	NA
Nickel	86	NA	NA	NA	NA
Potassium	NE	NA	NA	NA	NA
Selenium	3.4	NA	NA	NA	NA
Silver	11.2	NA	NA	NA	NA
Sodium	NE	NA	NA	NA	NA
Thallium	1.9	NA	NA	NA	NA
Vanadium	3400	NA	NA	NA	NA
Zinc	4100	Held	Held	Held	Held
SVOCs					
2,4-Dimethylphenol	8.8	0.265 U	0.275 U	0.259 U	0.333 U
2-Methylphenol (o-Cresol)	15	0.265 U	0.275 U	0.259 U	0.333 U
3&4 Methylphenol (p&m-Cresol)	NE**	1.06 U	1.10 U	1.04 U	1.33 U
Aniline	NE	2.12 U	2.20 U	2.08 U	2.67 U
Benzoic Acid	410	1.59 U	1.65 U	1.56 U	2.00 U
Benzyl Alcohol	NE	0.265 U	0.275 U	0.259 U	0.333 U
Phenol	68	0.265 U	0.275 U	0.259 U	0.333 U

Notes:

U	Analyte not detected at the listed detection limit
NA	Analyte not analyzed for
Shade	Analyte detected in concentration below the ADEC cleanup level
Shade	Analyte detected in concentration exceeding the ADEC cleanup leve
NE	Cleanup &/or Fbks background level for analyte not established
***	Cleanup level for individual analyte not established; see total xylene:
**	Cleanup levels established for individual analytes
DP#	Field Duplicate Pair

Fairbanks background metals concentrations only shown on pages with metals results (pages 1 and 2)

Table 5
Soil Boring Soil Samples - Detected Compounds Only
Perimeter Ditches (Section 6.1)

Sample ID	ADEC Cleanup Level	SB15-SC48	SB16-SC49	SB17-SC50	SB17-SC51	SB19-SC53	SB20-SC54	SB21-SC55	SB22-SC56
		Southeast Ditch	Southeast Ditch	South Ditch, DP11	South Ditch, DP11	North Ditch	Northeast Ditch	Northwest Ditch	West South Ditch
Work Order		1118921	1118921	1118921	1118921	1118921	1118921	1118921	1118921
PID (ppm)		2.5	3.3	2.9	2.9	2.2	2.1	NA	NA
Analyte	mg/kg								
Petroleum Fractions									
GRO	300	4.1 U	2.13 U	5.36 U	5.39 U	2.57 U	3.57 U	5.41 U	3.78 U
DRO	250	28	24 U	54.2	67.7	24.3 U	25.8 U	33.2	26.7 U
RRO	11000	118	24 U	246	278	24.3 U	25.8 U	292	163
VOCs									
1,2,4-Trimethylbenzene	23	0.082 U	0.0425 U	0.107 U	0.108 U	0.0515 U	0.0715 U	0.0541 U	0.0756 U
1,3,5-Trimethylbenzene	23	0.041 U	0.0213 U	0.0536 U	0.0539 U	0.0257 U	0.0357 U	0.0541 U	0.0378 U
2-Butanone (MEK)	59	0.41 U	0.213 U	0.536 U	0.539 U	0.257 U	0.357 U	0.541 U	0.378 U
2-Chlorotoluene	NE	0.041 U	0.0213 U	0.0536 U	0.0539 U	0.0257 U	0.0357 U	0.0541 U	0.0378 U
4-Isopropyltoluene	NE	0.041 U	0.0213 U	0.0536 U	0.0539 U	0.0257 U	0.0357 U	0.0541 U	0.0378 U
4-Methyl-2-pentanone (MIBK)	8.1	0.41 U	0.213 U	0.536 U	0.539 U	0.257 U	0.357 U	0.541 U	0.378 U
Benzene	0.025	0.0205 U	0.0106 U	0.0268 U	0.027 U	0.0129 U	0.0179 U	0.027 U	0.0189 U
Chloroform	0.46	0.041 U	0.0213 U	0.0536 U	0.0539 U	0.0257 U	0.0357 U	0.0541 U	0.0378 U
Chloromethane	0.21	0.041 U	0.0213 U	0.0536 U	0.0539 U	0.0257 U	0.0357 U	0.0541 U	0.0378 U
Ethylbenzene	6.9	0.041 U	0.0213 U	0.0536 U	0.0539 U	0.0257 U	0.0357 U	0.0541 U	0.0378 U
Isopropylbenzene (Cumene)	51	0.041 U	0.0213 U	0.0536 U	0.0539 U	0.0257 U	0.0357 U	0.0541 U	0.0378 U
Naphthalene	20	0.082 U	0.0425 U	0.107 U	0.108 U	0.0515 U	0.0715 U	0.108 U	0.0756 U
n-Butylbenzene	15	0.041 U	0.0213 U	0.0536 U	0.0539 U	0.0257 U	0.0357 U	0.0541 U	0.0378 U
n-Propylbenzene	15	0.041 U	0.0213 U	0.0536 U	0.0539 U	0.0257 U	0.0357 U	0.0541 U	0.0378 U
sec-Butylbenzene	12	0.041 U	0.0213 U	0.0536 U	0.0539 U	0.0257 U	0.0357 U	0.0541 U	0.0378 U
Styrene	0.96	0.041 U	0.0213 U	0.0536 U	0.0539 U	0.0257 U	0.0357 U	0.0541 U	0.0378 U
tert-Butylbenzene	12	0.041 U	0.0213 U	0.0536 U	0.0539 U	0.0257 U	0.0357 U	0.0541 U	0.0378 U
Tetrachloroethene	0.024	0.0205 U	0.0106 U	0.0268 U	0.027 U	0.0129 U	0.0179 U	0.027 U	0.0189 U
Toluene	6.5	0.041 U	0.0213 U	0.0799	0.0539 U	0.0257 U	0.0357 U	0.0541 U	0.0378 U
o-Xylene	NE ***	0.041 U	0.0213 U	0.0536 U	0.0539 U	0.0257 U	0.0357 U	0.0541 U	0.0378 U
p & m-Xylene	NE ***	0.082 U	0.0425 U	0.107 U	0.108 U	0.0515 U	0.0715 U	0.108 U	0.0756 U
Xylenes (total)	63	0.164 U	0.085 U	0.214 U	0.216 U	0.103 U	0.143 U	0.216 U	0.151 U
Glycols									
Ethylene Glycol	190	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U
Propylene Glycol	1900	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U
TAL 23 Metals									
Aluminum	NE	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	3.6	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	3.9	NA	NA	NA	NA	NA	NA	NA	NA
Barium	1100	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	42	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	5	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	NE	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (tot)	25	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	NE	NA	NA	NA	NA	NA	NA	NA	NA
Copper	460	NA	NA	NA	NA	NA	NA	NA	NA
Iron	NE	NA	NA	NA	NA	NA	NA	NA	NA
Lead	400	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	NE	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	NE	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	1.4	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	86	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	NE	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	3.4	NA	NA	NA	NA	NA	NA	NA	NA
Silver	11.2	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	NE	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	1.9	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	3400	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	4100	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs									
2,4-Dimethylphenol	8.8	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol (o-Cresol)	15	NA	NA	NA	NA	NA	NA	NA	NA
3&4 Methylphenol (p&m-Cresol)	NE**	NA	NA	NA	NA	NA	NA	NA	NA
Aniline	NE	NA	NA	NA	NA	NA	NA	NA	NA
Benzoic Acid	410	NA	NA	NA	NA	NA	NA	NA	NA
Benzyl Alcohol	NE	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	68	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

U	Analyte not detected at the listed detection limit
NA	Analyte not analyzed for
Shade	Analyte detected in concentration below the ADEC cleanup level
Shade	Analyte detected in concentration exceeding the ADEC cleanup level
NE	Cleanup &/or Fbks background level for analyte not established
***	Cleanup level for individual analyte not established; see total xylenes
**	Cleanup levels established for individual analytes
DP#	Field Duplicate Pair

Fairbanks background metals concentrations only shown on pages with metals results (pages 1 and 2)

Table 6
Site Characterization Soil Samples QC Summary - Detected Compounds Only

	Dup Pair #5			Dup Pair #6			Dup Pair #7		
	SE-SC01	**SE-SC16**	**RPD**	**SE-SC02**	**SE-SC17**	**RPD**	**S-SC25**	**S-SC26**	**RPD**
WORK ORDER	1118898			1118898			1118898		
Analyte	mg/kg	mg/kg	%	mg/kg	mg/kg	%	mg/kg	mg/kg	%
Petroleum Fractions									
GRO	5.77 U	5.7 U	NA	4.03 U	4.38 U	NA	6.67 U	7.13 U	NA
DRO	30.8	30	2.6%	29.4	32.2	9.1%	75.7	90.1	17.4%
RRO	213	199	6.8%	192	209	8.5%	395	475	18.4%
VOCs									
Benzene	*0.008 DL*	*0.008 DL*	NA	0.0202 U	0.0219 U	NA	*0.008 DL*	*0.008 DL*	NA
Ethylbenzene	0.0577 U	0.057 U	NA	0.0403 U	0.0438 U	NA	0.0667 U	0.0713 U	NA
Naphthalene	0.115 U	0.114 U	NA	0.0806 U	0.0876 U	NA	0.133 U	0.143 U	NA
Tetrachloroethene (PCE)	*0.008 DL*	*0.008 DL*	NA	0.0202 U	0.0219 U	NA	*0.008 DL*	*0.008 DL*	NA
Toluene	0.0577 U	0.057 U	NA	0.0403 U	0.0438 U	NA	0.0667 U	0.0713 U	NA
Total Xylenes	0.231 U	0.228 U	NA	0.161 U	0.175 U	NA	0.267 U	0.285 U	NA

	Dup Pair #8			Dup Pair #9			Dup Pair #10		
	SP1-SC32	**SP1-SC33**	**RPD**	**PIT1-SC34**	**PIT0-SC35**	**RPD**	**SP3-SC42**	**SP3-SC43**	**RPD**
WORK ORDER	1118898			1118921			1118921		
Analyte	mg/kg	mg/kg	%	mg/kg	mg/kg	%	mg/kg	mg/kg	%
Petroleum Fractions									
GRO	2.7 U	2.61 U	NA	1.68 U	1.83 U	NA	1.49 U	1.35 U	NA
DRO	194	58.4	107.4%	392	277	34.4%	134	154	13.9%
RRO	1170	238	132.4%	2870	1900	40.7%	992	1270	24.6%
VOCs									
Benzene	0.0135 U	0.0131 U	NA	0.0084 U	0.00913 U	NA	0.00743 U	0.00677 U	NA
Ethylbenzene	0.027 U	0.0261 U	NA	0.0168 U	0.0183 U	NA	0.0149 U	0.0135 U	NA
Naphthalene	0.0539 U	0.0523 U	NA	0.0336 U	0.0365 U	NA	0.0297 U	0.0271 U	NA
Tetrachloroethene (PCE)	0.0135 U	0.0131 U	NA	0.0084 U	0.00913 U	NA	0.00743 U	0.00677 U	NA
Toluene	0.027 U	0.0316	NA	0.0168 U	0.0183 U	NA	0.0149 U	0.0135 U	NA
Total Xylenes	0.108 U	0.105 U	NA	0.0672 U	0.0731 U	NA	0.0542 U	0.0542 U	NA

	Dup Pair #14			Dup Pair #15			Dup Pair #16		
	SS5-SC68	**SS5-SC69**	**RPD**	**PIT5-SC81**	**PIT5-SC82**	**RPD**	**PIT8-SC92**	**PIT8-SC93**	**RPD**
WORK ORDER	1119616			1119616			1119616		
Analyte	mg/kg	mg/kg	%	mg/kg	mg/kg	%	mg/kg	mg/kg	%
Petroleum Fractions									
GRO	1.25 U	1.27 U	NA	1.35 U	1.6 U	NA	1.26 U	1.41 U	NA
DRO	19.9 U	20.2 U	NA	20.4 U	20.4 U	NA	20.4 U	20.2 U	NA
RRO	65.5	39	50.7%	89.7	63.7	33.9%	92.3	67.1	31.6%
VOCs									
Benzene	0.00623 U	0.00636 U	NA	0.00675 U	0.00801 U	NA	0.00632 U	0.00704 U	NA
Ethylbenzene	0.0125 U	0.0127 U	NA	0.0135 U	0.016 U	NA	0.0126 U	0.0141 U	NA
Naphthalene	0.0249 U	0.0254 U	NA	0.027 U	0.0321 U	NA	0.0253 U	0.0282 U	NA
Tetrachloroethene (PCE)	0.00623 U	0.00636 U	NA	0.00675 U	0.00801 U	NA	0.00632 U	0.00704 U	NA
Toluene	0.0125 U	0.0127 U	NA	0.0135 U	0.016 U	NA	0.0126 U	0.0141 U	NA
Total Xylenes	0.0498 U	0.0509 U	NA	0.054 U	0.0641 U	NA	0.0506 U	0.0563 U	NA

	Dup Pair #17			Dup Pair #18			Dup Pair #21		
	PIT8-SC92	**PIT8-SC93**	**RPD**	**PIT8-SC92**	**PIT8-SC93**	**RPD**	**WD-SC120**	**WD-SC127**	**RPD**
WORK ORDER	1119616			1119616			1119647		
Analyte	mg/kg	mg/kg	%	mg/kg	mg/kg	%	mg/kg	mg/kg	%
Petroleum Fractions									
GRO	3.07 U	4.33 U	NA	1.61 U	1.33 U	NA	1.77 U	1.44 U	NA
DRO	23.3 U	23.6 U	NA	199	302	41.1%	145	103	33.9%
RRO	107	76.6	33.1%	1730	2310	28.7%	740	574	25.3%
VOCs									
Benzene	0.0154 U	0.0217 U	NA	0.00803 U	0.00667 U	NA	0.00885 U	0.00719 U	NA
Ethylbenzene	0.0307 U	0.0433 U	NA	0.0161 U	0.0133 U	NA	0.0177 U	0.0144 U	NA
Naphthalene	0.0614 U	0.0866 U	NA	0.0321 U	0.0267 U	NA	0.0354 U	0.0287 U	NA
Tetrachloroethene (PCE)	0.0154 U	0.0217 U	NA	0.00803 U	0.00667 U	NA	0.0117	0.0213	58.2%
Toluene	0.0307 U	0.0433 U	NA	0.0161 U	0.0133 U	NA	0.0177 U	0.0144 U	NA
Total Xylenes	0.123 U	0.173 U	NA	0.0643 U	0.0534 U	NA	0.0708 U	0.0575 U	NA

	Dup Pair #22			Dup Pair #26		
	WD-SC135	**WD-SC136**	**RPD**	**WD-SC165**	**WD-SC166**	**RPD**
WORK ORDER	1119647			1119647		
Analyte	mg/kg	mg/kg	%	mg/kg	mg/kg	%
Petroleum Fractions						
GRO	1.62 U	1.56 U	NA	3.97 U	3.79 U	NA
DRO	20.5 U	20.4 U	NA	23.5 U	24 U	NA
RRO	23.6	49.1	70.2%	131	124	5.5%
VOCs						
Benzene	0.00808 U	0.00779 U	NA	0.0198 U	0.019 U	NA
Ethylbenzene	0.0162 U	0.0156 U	NA	0.0397 U	0.0379 U	NA
Naphthalene	0.0323 U	0.0312 U	NA	0.0793 U	0.0758 U	NA
Tetrachloroethene (PCE)	0.00808 U	0.00779 U	NA	0.0198 U	0.019 U	NA
Toluene	0.0162 U	0.0156 U	NA	0.0397 U	0.0379 U	NA
Total Xylenes	0.0646 U	0.0623 U	NA	0.159 U	0.152 U	NA

Notes:

RPD	Relative Percent Difference
NA	Not Applicable
# DL	LOQ above ADEC cleanup level; DL is listed and under the cleanup level

Table 7
Building Perimeter Site Characterization Results QC Summary - Detected Compounds Only

	Duplicate Pair #19			Duplicate Pair #20			Duplicate Pair #23		
	BP-SC109	BP-SC110	RPD	BP-SC117	BP-SC118	RPD	BP-SC140	BP-SC141	RPD
WORK ORDER									
Analyte	mg/kg	mg/kg	%	mg/kg	mg/kg	%	mg/kg	mg/kg	%
Petroleum Fractions									
GRO	9.12	20.4	76.4%	6.26	5.4	14.8%	1.67 U	1.8 U	NA
DRO	1190	766	43.4%	4440	4230	4.8%	1950	1600	19.7%
RRO	7020	4580	42.1%	23800	23300	2.1%	9470	7900	18.1%
VOCs									
1,2,4-Trimethylbenzene	0.0282 U	0.397	NA	0.0269 U	0.0257 U	NA	0.0333 U	0.036 U	NA
1,3,5-Trimethylbenzene	0.0141 U	0.463	NA	0.0135 U	0.0129 U	NA	0.0307	0.0355	14.5%
2-Butanone (MEK)	0.141 U	0.112 U	NA	0.135 U	0.129 U	NA	0.167 U	0.180 U	NA
1,2 Dichlorobenzene	0.0141 U	0.0112 U	NA	0.0135 U	0.0129 U	NA	0.0167 U	0.018 U	NA
4-Isopropyltoluene	0.0141 U	0.0864	NA	0.0162	0.0129 U	NA	0.0167 U	0.022	NA
Benzene	0.00705 U	0.0056 U	NA	0.00673 U	0.00644 U	NA	0.00833 U	0.009 U	NA
Ethylbenzene	0.0141 U	0.0112 U	NA	0.0135 U	0.0129 U	NA	0.0167 U	0.018 U	NA
Isopropylbenzene (Cumene)	0.0141 U	0.0265	NA	0.0135 U	0.0129 U	NA	0.0167 U	0.018 U	NA
Naphthalene	0.0282 U	0.148	NA	0.0269 U	0.0257 U	NA	0.112	0.0553	67.8%
n-Butylbenzene	0.0141 U	0.0112 U	NA	0.0135 U	0.0129 U	NA	0.0167 U	0.018 U	NA
n-Propylbenzene	0.0141 U	0.0194	NA	0.0135 U	0.0129 U	NA	0.0167 U	0.018 U	NA
sec-Butylbenzene	0.0141 U	0.0404	NA	0.0135 U	0.0129 U	NA	0.0167 U	0.018 U	NA
Styrene	0.0141 U	0.0112 U	NA	0.0135 U	0.0129 U	NA	0.0167 U	0.018 U	NA
Tetrachloroethene (PCE)	0.00705 U	5.7	NA	12.2	13.5	10.1%	0.122	0.15	20.6%
Trichloroethene	0.0705 U	0.0056 U	NA	0.00673 U	0.00644 U	NA	0.00833 U	0.009 U	NA
Toluene	0.0141 U	0.0112 U	NA	0.0135 U	0.0129 U	NA	0.0167 U	0.0207	NA
o-Xylene	0.0141 U	0.413	NA	0.0135 U	0.0135	NA	0.282	0.296	4.8%
p & m-Xylene	0.0282 U	0.0807	NA	0.0269 U	0.0257 U	NA	0.0333 U	0.0421	NA
Xylenes (total)	0.0564 U	0.493	NA	0.0539 U	0.0515 U	NA	0.311	0.338	8.3%
Glycols									
Ethylene	< 2 U	< 2 U	NA	< 2 U	< 2 U	NA	< 2 U	< 2 U	NA
Propylene	< 2 U	< 2 U	NA	< 2 U	< 2 U	NA	< 2 U	< 2 U	NA

	Duplicate Pair #24			Duplicate Pair #25		
	BP-SC148	BP-SC149	RPD	BP-SC162	BP-SC163	RPD
WORK ORDER						
Analyte	mg/kg	mg/kg	%	mg/kg	mg/kg	%
Petroleum Fractions						
GRO	42.3	30.9	31.1%	1.64 U	1.79 U	NA
DRO	1200	4020	108.0%	3240	3330	2.7%
RRO	5880	19000	105.5%	18100	18700	3.3%
VOCs						
1,2,4-Trimethylbenzene	0.0364 U	0.0378 U	NA	0.0327 U	0.0359 U	NA
1,3,5-Trimethylbenzene	1.5	1.23	19.8%	0.0164 U	0.0179 U	NA
2-Butanone (MEK)	0.182 U	0.189 U	NA	0.164 U	0.179 U	NA
1,2 Dichlorobenzene	0.0182 U	0.0189 U	NA	0.0164 U	0.0179 U	NA
4-Isopropyltoluene	0.677	0.0908	152.7%	0.0255	0.0305	17.9%
Benzene	0.00910 U	0.00945 U	NA	0.00818 U	0.00897 U	NA
Ethylbenzene	0.0197	0.0191	3.1%	0.0164 U	0.0179 U	NA
Isopropylbenzene (Cumene)	0.0182 U	0.0189 U	NA	0.0164 U	0.0179 U	NA
Naphthalene	0.134	0.123	8.6%	0.0327 U	0.0359 U	NA
n-Butylbenzene	0.0182 U	0.0189 U	NA	0.0164 U	0.0179 U	NA
n-Propylbenzene	0.0189	0.0189 U	NA	0.0164 U	0.0179 U	NA
sec-Butylbenzene	0.0479	0.0393	19.7%	0.0164 U	0.0179 U	NA
Styrene	0.0182 U	0.0189 U	NA	0.0164 U	0.0179 U	NA
Tetrachloroethene (PCE)	59.3	35.1	51.3%	0.17	0.186	9.0%
Trichloroethene	0.0091 U	0.00945 U	NA	0.00818 U	0.00897 U	NA
Toluene	0.0182 U	0.0189 U	NA	0.0164 U	0.0179 U	NA
o-Xylene	0.0989	0.162	48.4%	0.0164 U	0.0179 U	NA
p & m-Xylene	0.0364 U	0.0378 U	NA	0.0327 U	0.0359 U	NA
Xylenes (total)	0.0989	0.162	48.4%	0.0654 U	0.0717 U	NA
Glycols						
Ethylene	< 2 U	< 2 U	NA	< 2 U	< 2 U	NA
Propylene	< 2 U	< 2 U	NA	< 2 U	< 2 U	NA

Notes:

NA Not Applicable
RPD Relative Percent Difference

Table 8-1
West Ditch and Building Perimeter Metals QC Summary

	DUPLICATE PAIR #21				DUPLICATE PAIR #25		
	WD-SC120	**WD-SC127**	**RPD**		**BP-SC162**	**BP-SC163**	**RPD**
Analyte	mg/kg	mg/kg	%		mg/kg	mg/kg	%
TAL 23 Metals							
Aluminum	5720	5690	0.5%		5890	5430	8.1%
Antimony	0.103 U	0.0995 U	NA		0.103 U	0.107 U	NA
Arsenic	3.33	3.12	6.5%		2.73	3.52	25.3%
Barium	66.8	61.8	7.8%		72.3	53.1	30.6%
Beryllium	0.103 U	0.0995 U	NA		0.12	0.107 U	NA
Cadmium	0.205 U	0.199 U	NA		0.206 U	0.214 U	NA
Calcium	2730	2490	9.2%		2720	2450	10.4%
Chromium (tot)	10.6	9.84	7.4%		10.7	8.78	19.7%
Cobalt	4.99	4.57	8.8%		5.26	4.46	16.5%
Copper	14.3	13.1	8.8%		12.8	13.6	6.1%
Iron	9990	9570	4.3%		10300	9940	3.6%
Lead	3.98	3.7	7.3%		3.74	3.65	2.4%
Magnesium	3710	3530	5.0%		3790	3270	14.7%
Manganese	204	190	7.1%		198	181	9.0%
Nickel	14.8	14.4	2.7%		14.7	12.8	13.8%
Potassium	538	520	3.4%		478	532	10.7%
Selenium	0.514 U	0.497 U	NA		0.514 U	0.535 U	NA
Silver	0.103 U	0.0995 U	NA		0.103 U	0.107 U	NA
Sodium	185	165	11.4%		166	194	15.6%
Thallium	0.0369	0.0395	6.8%		0.0317	0.036	12.7%
Vanadium	19.2	18.3	4.8%		20.8	17.7	16.1%
Zinc	27.6	25.5	7.9%		43.3	41.9	3.3%

Notes:

NA — Not Applicable
RPD — Relative Percent Difference

Table 8-2
Site Characterization Groundwater Samples QC Summary - Detected Compounds Only

	DUPLICATE PAIR #4				DUPLICATE PAIR #12		
	MW2	**MW31**	**RPD**		**W-TSP8**	**W-TSP9**	**RPD**
Analyte	mg/kg	mg/kg	%		mg/kg	mg/kg	%
Petroleum Fractions							
GRO	0.100 U	0.100 U	NA		0.1 U	0.1 U	NA
DRO	0.800 U	0.800 U	NA		0.6 U	0.6 U	NA
RRO	0.500 U	0.500 U	NA		0.5 U	0.5 U	NA
VOCs (Method 8260B)							
1,2,4-Trimethylbenzene	0.001 U	0.001 U	NA		0.001 U	0.001 U	NA
1,3,5-Trimethylbenzene	0.001 U	0.001 U	NA		0.001 U	0.001 U	NA
2 Butanone (MEK)	0.1	0.125	22.2%		0.01 U	0.01 U	NA
2-Chlorotoluene	0.001 U	0.001 U	NA		0.001 U	0.001 U	NA
2-Hexanone	0.01 U	0.01 U	NA		0.01 U	0.01 U	NA
4-Isopropyltoluene	0.001 U	0.001 U	NA		0.001 U	0.001 U	NA
4-Methyl-2-pentanone (MIBK)	0.0313	0.0343	9.1%		0.01 U	0.01 U	NA
Benzene	0.00134	0.00158	16.4%		0.0004 U	0.0004 U	NA
Chloroform	0.001 U	0.001 U	NA		0.001 U	0.001 U	NA
Chloromethane	0.00161 U	0.00160 U	NA		0.001 U	0.001 U	NA
Ethylbenzene	0.001 U	0.001 U	NA		0.001 U	0.001 U	NA
Isopropylbenzene (Cumene)	0.001 U	0.001 U	NA		0.001 U	0.001 U	NA
Methylene chloride	0.005 U	0.005 U	NA		0.005 U	0.005 U	NA
Naphthalene	0.002 U	0.002 U	NA		0.002 U	0.002 U	NA
n-Butylbenzene	0.001 U	0.001 U	NA		0.001 U	0.001 U	NA
n-Propylbenzene	0.001 U	0.001 U	NA		0.001 U	0.001 U	NA
sec-Butylbenzene	0.001 U	0.001 U	NA		0.001 U	0.001 U	NA
Styrene	0.001 U	0.001 U	NA		0.001 U	0.001 U	NA
tert-Butylbenzene	0.001 U	0.001 U	NA		0.001 U	0.001 U	NA
Tetrachloroethene	0.001 U	0.001 U	NA		0.001 U	0.001 U	NA
Toluene	0.00122	0.00135	10.1%		0.001 U	0.001 U	NA
o-Xylene	0.001 U	0.001 U	NA		0.001 U	0.001 U	NA
p & m-Xylene	0.002 U	0.002 U	NA		0.002 U	0.002 U	NA
Xylenes (total)	0.003 U	0.003 U	NA		0.003 U	0.003 U	NA

NA — Not Applicable
RPD — Relative Percent Difference

Table 9
Soil Borings Soil Samples QC Summary - Detected Compounds Only

Sample ID	B4 2-4	B5 2-4	RPD		B9 7-9	B5 9	RPD
Duplicate Pair #	DP2	DP2			DP3	DP3	
Work Order	1118380	1118380			1118394	1118394	
Analyte	mg/kg	mg/kg	%		mg/kg	mg/kg	%
Petroleum Fractions							
GRO	1.96 U	1.96 U	NA		1.51 U	1.35 U	NA
DRO	1,980	3,340	51.1%		20.7 U	20.4 U	NA
RRO	12,000	18,900	44.7%		20.7 U	20.4 U	NA
VOCs							
1,2,4-Trimethylbenzene	0.0392 U	0.0259 U	NA		0.0308 U	0.0270 U	NA
1,3,5-Trimethylbenzene	0.0196 U	0.0129 U	NA		0.0154 U	0.0135 U	NA
2-Butanone (MEK)	0.196 U	0.129 U	NA		0.154 U	0.135 U	NA
2-Chlorotoluene	0.0196 U	0.0129 U	NA		0.0154 U	0.0135 U	NA
4-Isopropyltoluene	0.0603	0.0382	44.9%		0.0154 U	0.0135 U	NA
4-Methyl-2-pentanone (MIBK)	0.196 U	0.129 U	NA		0.154 U	0.135 U	NA
Benzene	0.0253	0.0115	75.0%		0.00771 U	0.00674 U	NA
Chloroform	0.0196 U	0.0129 U	NA		0.0154 U	0.0135 U	NA
Chloromethane	0.0196 U	0.0129 U	NA		0.0154 U	0.0135 U	NA
Ethylbenzene	0.0431	0.0213	67.7%		0.0154 U	0.0135 U	NA
Isopropylbenzene (Cumene)	0.0196 U	0.0129 U	NA		0.0154 U	0.0135 U	NA
Naphthalene	3.14	1.400	76.7%		0.131 U	0.0270 U	NA
n-Butylbenzene	0.551	0.329	50.5%		0.0154 U	0.0135 U	NA
n-Propylbenzene	0.0196 U	0.0129 U	NA		0.0154 U	0.0135 U	NA
sec-Butylbenzene	0.0196 U	0.0129 U	NA		0.0154 U	0.0135 U	NA
Styrene	0.0652	0.0329	65.9%		0.0154 U	0.0135 U	NA
tert-Butylbenzene	0.0196 U	0.0129 U	NA		0.0154 U	0.0135 U	NA
Tetrachloroethene	0.0873	0.0348	86.0%		0.00771 U	0.00674 U	NA
Toluene	0.182	0.0917	66.0%		0.0308 U	0.0270 U	NA
o-Xylene	0.0392 U	0.0259 U	NA		0.0308 U	0.0270 U	NA
p & m-Xylene	0.124	0.0638	64.1%		0.0308 U	0.0270 U	NA
Xylenes (total)	0.159	0.0809	65.1%		0.0617 U	0.0539 U	NA
Glycols							
Ethylene Glycol	<2 U	<2 U	NA		16	9.9	47.10%
Propylene Glycol	<2 U	<2 U	NA		<2 U	<2 U	NA
TAL 23 Metals							
Aluminum	3770	4550	18.8%		NA	NA	NA
Antimony	0.102 U	0.102 U	NA		NA	NA	NA
Arsenic	2.55	4.12	47.1%		NA	NA	NA
Barium	53.4	64.1	18.2%		NA	NA	NA
Beryllium	0.102 U	0.102 U	NA		NA	NA	NA
Cadmium	0.204 U	0.200 U	NA		NA	NA	NA
Calcium	1810	2020	11.0%		NA	NA	NA
Chromium (tot)	8.76	10.5	18.1%		NA	NA	NA
Cobalt	3.43	4.71	31.4%		NA	NA	NA
Copper	9.69	12.1	22.1%		NA	NA	NA
Iron	6950	9010	25.8%		NA	NA	NA
Lead	3.2	3.61	12.0%		NA	NA	NA
Magnesium	2510	2880	13.7%		NA	NA	NA
Manganese	139	178	24.6%		NA	NA	NA
Mercury	0.0408 U	0.0404 U	NA		NA	NA	NA
Nickel	10.4	12.9	21.5%		NA	NA	NA
Potassium	377	408	7.9%		NA	NA	NA
Selenium	0.511 U	0.499 U	NA		NA	NA	NA
Silver	0.102 U	0.0998 U	NA		NA	NA	NA
Sodium	191	172	10.5%		NA	NA	NA
Thallium	0.0257	0.0297	14.4%		NA	NA	NA
Vanadium	13.7	16.3	17.3%		NA	NA	NA
Zinc	45.3	40.3	11.7%		NA	NA	NA
SVOCs							
2,4-Dimethylphenol	2.57 U	5.10 U	NA		0.255 U	0.257 U	NA
2-Methylphenol (o-Cresol)	2.57 U	5.10 U	NA		0.255 U	0.257 U	NA
3&4 Methylphenol (p&m-Cresol)	10.3 U	20.4 U	NA		1.02 U	1.03 U	NA
Aniline	20.6 U	40.8 U	NA		2.04 U	2.06 U	NA
Benzoic Acid	15.4 U	30.6 U	NA		1.53 U	1.54 U	NA
Benzyl Alcohol	2.57 U	5.10 U	NA		0.255 U	0.257 U	NA
Phenol	2.57 U	5.10 U	NA		0.255 U	0.257 U	NA

Notes:

# U	Analyte not detected at the listed detection limit
NA	Analyte not analyzed for
NE	Cleanup &/or Fbks background level for analyte not established
***	Cleanup level for individual analyte not established; see total xylenes
**	Cleanup levels established for individual analytes
DP#	Field Duplicate Pair

Table 9
Soil Borings Soil Samples QC Summary - Detected Compounds Only

Sample ID	SB17-SC50	SB17-SC51	RPD		SB17-SC50	SB17-SC51	RPD
Duplicate Pair #	DP11	DP11			DP11	DP11	
Work Order	1118921	1118921			1118921	1118921	
Analyte	mg/kg	mg/kg	%		mg/kg	mg/kg	%
Petroleum Fractions							
GRO	5.36 U	5.39 U	NA		3.40 U	3.46 U	NA
DRO	54.2	67.7	22.1%		3620	2460	38.2%
RRO	246	278	12.2%		16000	11500	32.7%
VOCs							
1,2,4-Trimethylbenzene	0.107 U	0.108 U	NA		0.0679 U	0.0693 U	NA
1,3,5-Trimethylbenzene	0.0536 U	0.0539 U	NA		0.0340 U	0.0346 U	NA
2-Butanone (MEK)	0.536 U	0.539 U	NA		0.340 U	0.346 U	NA
2-Chlorotoluene	0.0536 U	0.0539 U	NA		0.0340 U	0.0346 U	NA
4-Isopropyltoluene	0.0536 U	0.0539 U	NA		0.0428	0.0346 U	NA
4-Methyl-2-pentanone (MIBK)	0.536 U	0.539 U	NA		0.340 U	0.346 U	NA
Benzene	0.0268 U	0.027 U	NA		0.0170 U	0.0173 U	NA
Chloroform	0.0536 U	0.0539 U	NA		0.0340 U	0.0346 U	NA
Chloromethane	0.0536 U	0.0539 U	NA		0.0340 U	0.0346 U	NA
Ethylbenzene	0.0536 U	0.0539 U	NA		0.0340 U	0.0346 U	NA
Isopropylbenzene (Cumene)	0.0536 U	0.0539 U	NA		0.0340 U	0.0346 U	NA
Naphthalene	0.107 U	0.108 U	NA		1.57	1.73	9.7%
n-Butylbenzene	0.0536 U	0.0539 U	NA		0.366	0.325	11.9%
n-Propylbenzene	0.0536 U	0.0539 U	NA		0.0340 U	0.0346 U	NA
sec-Butylbenzene	0.0536 U	0.0539 U	NA		0.0340 U	0.0346 U	NA
Styrene	0.0536 U	0.0539 U	NA		0.0340 U	0.0346 U	NA
tert-Butylbenzene	0.0536 U	0.0539 U	NA		0.0340 U	0.0346 U	NA
Tetrachloroethene	0.0268 U	0.027 U	NA		0.0486	0.0457	6.2%
Toluene	0.0799	0.0539 U	NA		0.188	0.119	45.0%
o-Xylene	0.0536 U	0.0539 U	NA		0.0679 U	0.0693 U	NA
p & m-Xylene	0.107 U	0.108 U	NA		0.0679 U	0.0693 U	NA
Xylenes (total)	0.214 U	0.216 U	NA		0.136 U	0.139 U	NA
Glycols							
Ethylene Glycol	<2 U	<2 U	NA		<2 U	<2 U	NA
Propylene Glycol	<2 U	<2 U	NA		<2 U	<2 U	NA
Aluminum	NA	NA	NA		NA	NA	NA
Antimony	NA	NA	NA		NA	NA	NA
Arsenic	NA	NA	NA		NA	NA	NA
Barium	NA	NA	NA		NA	NA	NA
Beryllium	NA	NA	NA		NA	NA	NA
Cadmium	NA	NA	NA		NA	NA	NA
Calcium	NA	NA	NA		NA	NA	NA
Chromium (tot)	NA	NA	NA		NA	NA	NA
Cobalt	NA	NA	NA		NA	NA	NA
Copper	NA	NA	NA		NA	NA	NA
Iron	NA	NA	NA		NA	NA	NA
Lead	NA	NA	NA		NA	NA	NA
Magnesium	NA	NA	NA		NA	NA	NA
Manganese	NA	NA	NA		NA	NA	NA
Mercury	NA	NA	NA		NA	NA	NA
Nickel	NA	NA	NA		NA	NA	NA
Potassium	NA	NA	NA		NA	NA	NA
Selenium	NA	NA	NA		NA	NA	NA
Silver	NA	NA	NA		NA	NA	NA
Sodium	NA	NA	NA		NA	NA	NA
Thallium	NA	NA	NA		NA	NA	NA
Vanadium	NA	NA	NA		NA	NA	NA
Zinc	NA	NA	NA		NA	NA	NA
SVOCs							
2,4-Dimethylphenol	NA	NA	NA		5.74 U	5.77 U	NA
2-Methylphenol (o-Cresol)	NA	NA	NA		5.74 U	5.77 U	NA
3&4 Methylphenol (p&m-Cresol)	NA	NA	NA		23.0 U	23.1 U	NA
Aniline	NA	NA	NA		45.9 U	46.1 U	NA
Benzoic Acid	NA	NA	NA		34.4 U	34.6 U	NA
Benzyl Alcohol	NA	NA	NA		5.74 U	5.77 U	NA
Phenol	NA	NA	NA		5.74 U	5.77 U	NA

Notes:

# U	Analyte not detected at the listed detection limit
NA	Analyte not analyzed for
NE	Cleanup &/or Fbks background level for analyte not established
***	Cleanup level for individual analyte not established; see total xylenes
**	Cleanup levels established for individual analytes
DP#	Field Duplicate Pair

Appendix 3

Soil Boring Logs

NORTECH Environmental and Engineering Consultants Test Boring Log

PROJECT: **NAPA**
LOCATION: **1937 Van Horn Road, Fairbanks, Alaska**

JOB NO.	11-1042
HOLE NO.	B1
SHEET	1
START DATE	9-Jun-11
FINISH DATE	9-Jun-11
DRILLER	Paul
HELPER	Leed
INSPECTOR	Peter/Ron

	CASING		SAMPLE	CORE
TYPE				
SIZE (ID)				
HAMMER WT				
HAMMER FALL				

GROUNDWATER		DEPTH TO		
DATE	TIME	WATER	BOTTOM	BOTTOM OF HOLE

DEPTH IN FEET	CASING BLOWS PER FOOT	LAB SAMPLE NO	SAMPLE DEPTH (FT)	SAMPLE BLOWS PER 6 INCHES	RECOVERY (IN)	SOIL DESCRIPTION AND OTHER DATA		PID
0.0								
2.5					3'	Sandy gravel building pad fill	dry	9.4
								13.8
5.0								18.8
					3.5'			1.7
								3.7
7.5								7.1
								5.5
10.0							moist	7.4
					4'		very moist	
						Brown very fine sandy silt	very moist	18.1
							moist	2.7
12.5						Tan to gray silty sand	moist	0.7
						Becoming gray sand	very moist	
						Gray sandy gravel	Saturated	1.7
						End of Boring @ 14'		
15.0								
17.5								
20.0								

NOTES: 0.0' Elevation is relative to local ground surface, collected sample SB17-SC50 and SB17-SC51 (dup) at 1410 & 1415 from 0-2', collect sample S-TSP4 at 1510 from 5-6', well screen at 6-10'

NORTECH Environmental and Engineering Consultants Test Boring Log

PROJECT: **NAPA**
LOCATION: **1937 Van Horn Road,Fairbanks, Alaska**

JOB NO.	11-1042
HOLE NO.	B2
SHEET	1
START DATE	9-Jun-11
FINISH DATE	9-Jun-11
DRILLER	Paul
HELPER	Leed
INSPECTOR	Peter/Ron

	CASING		SAMPLE	CORE
TYPE				
SIZE (ID)				
HAMMER WT				
HAMMER FALL				

GROUNDWATER		DEPTH TO		
DATE	TIME	WATER	BOTTOM	BOTTOM OF HOLE

DEPTH IN FEET	CASING BLOWS PER FOOT	LAB SAMPLE NO	SAMPLE DEPTH (FT)	SAMPLE BLOWS PER 6 INCHES	RECOVERY (IN)	SOIL DESCRIPTION AND OTHER DATA		PID
0.0								
2.5					3'			12.4
						Sandy gravel building pad fill	dry	
5.0								13.4
					4'			0.6
								9.2
7.5								7.4
								10.3
10.0								6.2
					3'		moist	
							very moist	26.7
						Brown very fine sandy silt	moist	
								6.8
12.5						Tan to gray silty sand	very moist	
								0.2
						End of Boring @ 13'		
15.0								
17.5								
20.0								

NOTES: 0.0' Elevation is relative to local ground surface, collected sample SB17-SC50 and SB17-SC51 (dup) at 1410 & 1415 from 0-2', collect sample S-TSP4 at 1510 from 5-6', well screen at 6-10'

NORTECH Environmental and Engineering Consultants Test Boring Log

PROJECT: **NAPA**
LOCATION: **1937 Van Horn Road,Fairbanks, Alaska**

JOB NO.	11-1042
HOLE NO.	B3
SHEET	1
START DATE	9-Jun-11
FINISH DATE	9-Jun-11
DRILLER	Paul
HELPER	Leed
INSPECTOR	Peter/Ron

	CASING		SAMPLE	CORE
TYPE				
SIZE (ID)				
HAMMER WT				
HAMMER FALL				

GROUNDWATER		DEPTH TO		
DATE	TIME	WATER	BOTTOM	BOTTOM OF HOLE

DEPTH IN FEET	CASING BLOWS PER FOOT	LAB SAMPLE NO	SAMPLE DEPTH (FT)	SAMPLE BLOWS PER 6 INCHES	RECOVERY (IN)	SOIL DESCRIPTION AND OTHER DATA	PID
0.0							
2.5					2'	Sandy gravel building pad fill dry	47.3
							22.3
5.0							33.2
					4'		4.1
							9.6
7.5						dry	28.6
10.0							
12.5							
15.0							
17.5							
20.0							

NOTES: 0.0' Elevation is relative to local ground surface, collected sample SB17-SC50 and SB17-SC51 (dup) at 1410 & 1415 from 0-2', collect sample S-TSP4 at 1510 from 5-6', well screen at 6-10'

NORTECH Environmental and Engineering Consultants Test Boring Log

PROJECT:	**NAPA**	JOB NO.	11-1042
LOCATION:	**1937 Van Horn Road,Fairbanks, Alaska**	HOLE NO.	B4
		SHEET	1

	CASING		SAMPLE	CORE
TYPE				
SIZE (ID)				
HAMMER WT				
HAMMER FALL				

GROUNDWATER		DEPTH TO		
DATE	TIME	WATER	BOTTOM	BOTTOM OF HOLE

START DATE	9-Jun-11
FINISH DATE	9-Jun-11
DRILLER	Paul
HELPER	Leed
INSPECTOR	Ron

DEPTH IN FEET	CASING BLOWS PER FOOT	LAB SAMPLE NO	SAMPLE DEPTH (FT)	SAMPLE BLOWS PER 6 INCHES	RECOVERY (IN)	SOIL DESCRIPTION AND OTHER DATA		PID
0.0								
2.5		B4 2-4 & Dup B5 2-4			3'	Sandy gravel building pad fill	Dry	101
5.0		B4 4-6						10.2
		B4 6-7			3.5'	Sandy gravel building pad fill	Dry	50.4
7.5								7.4
								6.9
10.0							Slightly Moist	10.1
		B4 10-11			4'	Brown very fine sandy silt	Moist	22.7
						Gray Silt grading to Sandy Silt	Very Moist	2.7
12.5						Increasing sand	Moist	1.1
		B4 13-14					Saturated	
						Gray sandy gravel	Saturated	1.3
						End of Boring @ 14'		
15.0								
17.5								
20.0								

NOTES: 0.0' Elevation is relative to local ground surface, collected sample SB17-SC50 and SB17-SC51 (dup) at 1410 & 1415 from 0-2', collect sample S-TSP4 at 1510 from 5-6', well screen at 6-10'

NORTECH Environmental and Engineering Consultants Test Boring Log

PROJECT: **NAPA**
LOCATION: **1937 Van Horn Road,Fairbanks, Alaska**

JOB NO.	11-1042
HOLE NO.	B6
SHEET	1
START DATE	9-Jun-11
FINISH DATE	9-Jun-11
DRILLER	Paul
HELPER	Leed
INSPECTOR	Andrew

	CASING		SAMPLE	CORE
TYPE				
SIZE (ID)				
HAMMER WT				
HAMMER FALL				

GROUNDWATER		DEPTH TO		
DATE	TIME	WATER	BOTTOM	BOTTOM OF HOLE

DEPTH IN FEET	CASING BLOWS PER FOOT	LAB SAMPLE NO	SAMPLE DEPTH (FT)	SAMPLE BLOWS PER 6 INCHES	RECOVERY (IN)	SOIL DESCRIPTION AND OTHER DATA		PID
0.0								
		B6 0-3			2.5'	Sandy gravel building pad fill	moist	
2.5							dry	18.9
							dry	7.8
5.0								4.4
					3.5'	Sandy gravel building pad fill		
								11.5
7.5								
						Sandy gravel building pad fill		15.8
10.0					4'	Grading to brown sandy silt	moist	
						Dark brown very fine sandy silt		
		B6 10-12					very moist	24.6
						Tan to gray silty sand		
						Gray silty sandy gravel	saturated	
12.5						End of Boring @ 12'		
15.0								
17.5								
20.0								

NOTES: 0.0' Elevation is relative to local ground surface, collected sample SB17-SC50 and SB17-SC51 (dup) at 1410 & 1415 from 0-2', collect sample S-TSP4 at 1510 from 5-6', well screen at 6-10'

NORTECH Environmental and Engineering Consultants Test Boring Log

PROJECT: **NAPA**
LOCATION: **1937 Van Horn Road,Fairbanks, Alaska**

JOB NO.	11-1042
HOLE NO.	B7
SHEET	1
START DATE	9-Jun-11
FINISH DATE	9-Jun-11
DRILLER	Paul
HELPER	Leed
INSPECTOR	Andrew

	CASING		SAMPLE	CORE
TYPE				
SIZE (ID)				
HAMMER WT				
HAMMER FALL				

GROUNDWATER		DEPTH TO		
DATE	TIME	WATER	BOTTOM	BOTTOM OF HOLE

DEPTH IN FEET	CASING BLOWS PER FOOT	LAB SAMPLE NO	SAMPLE DEPTH (FT)	SAMPLE BLOWS PER 6 INCHES	RECOVERY (IN)	SOIL DESCRIPTION AND OTHER DATA		PID
0.0					3.5'		very moist	0.4
						Sandy gravel building pad fill	dry	
2.5								0
					4'			0
5.0						Sandy gravel building pad fill		
								0
7.5								
					4'	Sandy gravel building pad fill	dry	1.1
		B7 9-10						14.7
10.0						Grading to brown very fine sandy silt		
		B7 10-11					moist	7.1
						Dark brown very fine sandy silt	very moist	
							saturated	9.2
12.5						End of Boring @ 12'		
15.0								
17.5								
20.0								

NOTES: 0.0' Elevation is relative to local ground surface, collected sample SB17-SC50 and SB17-SC51 (dup) at 1410 & 1415 from 0-2', collect sample S-TSP4 at 1510 from 5-6', well screen at 6-10'

NORTECH Environmental and Engineering Consultants Test Boring Log

PROJECT: **NAPA**
LOCATION: **1937 Van Horn Road,Fairbanks, Alaska**

JOB NO.	11-1042
HOLE NO.	B8
SHEET	1
START DATE	9-Jun-11
FINISH DATE	9-Jun-11
DRILLER	Paul
HELPER	Leed
INSPECTOR	Ron/Andrew

	CASING		SAMPLE	CORE
TYPE				
SIZE (ID)				
HAMMER WT				
HAMMER FALL				

GROUNDWATER		DEPTH TO		
DATE	TIME	WATER	BOTTOM	BOTTOM OF HOLE

DEPTH IN FEET	CASING BLOWS PER FOOT	LAB SAMPLE NO	SAMPLE DEPTH (FT)	SAMPLE BLOWS PER 6 INCHES	RECOVERY (IN)	SOIL DESCRIPTION AND OTHER DATA		PID
0.0								
2.5					4'	Sandy gravel building pad fill		1.1
								1.3
								1.8
5.0								1.2
								4.2
7.5		B8 6.5-7.5			4'	Sandy gravel building pad fill		5.9
								4
						Grading to brown sandy silt		6.7
10.0		B8 9.5-10.5			4'	Dark brown very fine sandy silt	moist	
							very moist	12.1
							saturated	5.8
12.5						Tan to gray silty sand	saturated	8.1
						Increasing sand w/ fine gravel		9.7
						End of Boring @ 13.5'		
15.0								
17.5								
20.0								

NOTES: 0.0' Elevation is relative to local ground surface, collected sample SB17-SC50 and SB17-SC51 (dup) at 1410 & 1415 from 0-2', collect sample S-TSP4 at 1510 from 5-6', well screen at 6-10'

NORTECH Environmental and Engineering Consultants Test Boring Log

PROJECT: **NAPA**
LOCATION: **1937 Van Horn Road,Fairbanks, Alaska**

JOB NO.	11-1042
HOLE NO.	B9
SHEET	1
START DATE	9-Jun-11
FINISH DATE	9-Jun-11
DRILLER	Paul
HELPER	Leed
INSPECTOR	Ron/Andrew

	CASING		SAMPLE	CORE
TYPE				
SIZE (ID)				
HAMMER WT				
HAMMER FALL				

GROUNDWATER		DEPTH TO		
DATE	TIME	WATER	BOTTOM	BOTTOM OF HOLE

DEPTH IN FEET	CASING BLOWS PER FOOT	LAB SAMPLE NO	SAMPLE DEPTH (FT)	SAMPLE BLOWS PER 6 INCHES	RECOVERY (IN)	SOIL DESCRIPTION AND OTHER DATA		PID
0.0								
2.5		B9 2-4			3'		moist	12.6
						Sandy gravel building pad fill	dry	
5.0								12.1
								32.6
7.5		B9 7-9 & Dup B5 9			4'	Sandy gravel building pad fill	dry	8.4
								8
10.0							moist	8.6
		B9 10-11			4'	Grading to brown sandy silt	very moist	20.5
						Dark Brown very fine sandy silt	moist	17.8
12.5						Tan to gray silty sand	very moist	21.4
						Becoming coarse gray sand	saturated	8.2
						End of Boring @ 14'		
15.0								
17.5								
20.0								

NOTES: 0.0' Elevation is relative to local ground surface, collected sample SB17-SC50 and SB17-SC51 (dup) at 1410 & 1415 from 0-2', collect sample S-TSP4 at 1510 from 5-6', well screen at 6-10'

NORTECH Environmental and Engineering Consultants Test Boring Log

PROJECT: **NAPA**
LOCATION: **1937 Van Horn Road,Fairbanks, Alaska**

JOB NO.	11-1042
HOLE NO.	B10/MW1
SHEET	1
START DATE	11-Jun-11
FINISH DATE	11-Jun-11
DRILLER	Paul
HELPER	Leed
INSPECTOR	Andrew/Ron

	CASING	SAMPLE	CORE
TYPE	Pre-pack PVC		
SIZE (ID)	1.5"		
HAMMER WT			
HAMMER FALL			

GROUNDWATER DATE	GROUNDWATER TIME	DEPTH TO WATER	DEPTH TO BOTTOM	DEPTH TO BOTTOM OF HOLE
		14.6	20	20.5

DEPTH IN FEET	CASING BLOWS PER FOOT	LAB SAMPLE NO	SAMPLE DEPTH (FT)	SAMPLE BLOWS PER 6 INCHES	RECOVERY (IN)	SOIL DESCRIPTION AND OTHER DATA		PID
0.0								
2.5								
5.0		B10 4.5-5.5			2.5'	Mixed sandy gravel and fine silty sand	moist	112
						Dark Brown very fine sandy silt w/ coarse organics	moist	
7.5		B10 6.5-8.5						4.7
					3.5'	Brown to tan silty sand trace organics	very moist	2.2
10.0								1.1
							moist	2.2
12.5						Gray sandy silt w/ organics coarse woody debris and roots	very moist saturated	1
					4	Medium to coarse gray sand intermixed w/ gray silty sand and gray sandy gravel	saturated	1.4
								0.8
15.0								0.5
						Gray sandy gravel intermixed w/ lenses of gray sand	saturated	0.6
17.5					4'			1
								0.8
								0.4
20.0								0.8

NOTES: 0.0' Elevation is relative to local ground surface, collected sample SB17-SC50 and SB17-SC51 (dup) at 1410 & 1415 from 0-2', collect sample S-TSP4 at 1510 from 5-6', well screen at 6-10'

NORTECH Environmental and Engineering Consultants Test Boring Log

PROJECT: **NAPA**
LOCATION: **1937 Van Horn Road,Fairbanks, Alaska**

JOB NO.	11-1042
HOLE NO.	B11/MW2
SHEET	1
START DATE	11-Jun-11
FINISH DATE	11-Jun-11
DRILLER	Paul
HELPER	Leed
INSPECTOR	Andrew/Ron

	CASING		SAMPLE	CORE
TYPE	Pre-pack PVC			
SIZE (ID)	1.5"			
HAMMER WT				
HAMMER FALL				

GROUNDWATER		DEPTH TO		
DATE	TIME	WATER	BOTTOM	BOTTOM OF HOLE
		???	20'	21'

DEPTH IN FEET	CASING BLOWS PER FOOT	LAB SAMPLE NO	SAMPLE DEPTH (FT)	SAMPLE BLOWS PER 6 INCHES	RECOV-ERY (IN)	SOIL DESCRIPTION AND OTHER DATA		PID
0.0								
2.5								
5.0					4'	Very fine tan sandy silty w/ organics (roots)	dry	0.4
						Brown very fine sandy silt w/ fine gravel intermixed		0.5
7.5						Brown silt		0.5
						Tan to gray sand gravel		
						Brown to tan silty sand trace organics	dry / moist	0.4 / 0.4
10.0					4'	Tan silty sand	very moist	
						Medium to coarse gray sand w/ coarse organics (charcoal)	saturated	0.6
12.5						Gray sand intermixed w/ organics	moist	0.3 / 0.3
		B11 13-14				Medium to coarse gray sand intermixed w/ gray silty sand	moist / saturated	3.4
15.0					4'	Gray sandy gravel	saturated	3.8
17.5					4'	Gray sandy gravel intermixed w/ lenses of gray sand	saturated	2.1 / 0.3 / 6.1 / 9.5 / 4.5
20.0								

NOTES: 0.0' Elevation is relative to local ground surface, collected sample SB17-SC50 and SB17-SC51 (dup) at 1410 & 1415 from 0-2', collect sample S-TSP4 at 1510 from 5-6', well screen at 6-10'

NORTECH Environmental and Engineering Consultants Test Boring Log

PROJECT: **NAPA**
LOCATION: **1937 Van Horn Road,Fairbanks, Alaska**

JOB NO.	11-1042
HOLE NO.	B12
SHEET	1
START DATE	11-Jun-11
FINISH DATE	11-Jun-11
DRILLER	Paul
HELPER	Leed
INSPECTOR	Andrew/Ron

	CASING		SAMPLE	CORE
TYPE				
SIZE (ID)				
HAMMER WT				
HAMMER FALL				

GROUNDWATER		DEPTH TO		
DATE	TIME	WATER	BOTTOM	BOTTOM OF HOLE

DEPTH IN FEET	CASING BLOWS PER FOOT	LAB SAMPLE NO	SAMPLE DEPTH (FT)	SAMPLE BLOWS PER 6 INCHES	RECOVERY (IN)	SOIL DESCRIPTION AND OTHER DATA	PID
0.0							
2.5							
5.0							
		B12 6.5-8 & Dup B5 6.5-8					
7.5					3'	Tan sandy gravel	105
						Dark brown very fine sandy silt w/ fine gravel	
						Tan silty sand grading to mottled tan gray sand w/ trace silt & organics	5.6
10.0						Medium gray sand w/ organics (charcoal)	
						Medium Gray Sand	4.6
12.5					4'	Mottled tan/gray sand w/ trace silt	9
		B12 12.5-14'5					9.4
						Mottled tan/gray sandy silt Decreasing sand content	9.4
15.0						End of boring @ 14.5'	
17.5							
20.0							

NOTES: 0.0' Elevation is relative to local ground surface, collected sample SB17-SC50 and SB17-SC51 (dup) at 1410 & 1415 from 0-2', collect sample S-TSP4 at 1510 from 5-6', well screen at 6-10'

NORTECH Environmental and Engineering Consultants Test Boring Log

PROJECT: **NAPA**
LOCATION: **1937 Van Horn Road,Fairbanks, Alaska**

JOB NO.	11-1042
HOLE NO.	B13
SHEET	1
START DATE	11-Jun-11
FINISH DATE	11-Jun-11
DRILLER	Paul
HELPER	Leed
INSPECTOR	Andrew/Ron

	CASING		SAMPLE	CORE
TYPE				
SIZE (ID)				
HAMMER WT				
HAMMER FALL				

GROUNDWATER		DEPTH TO		
DATE	TIME	WATER	BOTTOM	BOTTOM OF HOLE

DEPTH IN FEET	CASING BLOWS PER FOOT	LAB SAMPLE NO	SAMPLE DEPTH (FT)	SAMPLE BLOWS PER 6 INCHES	RECOVERY (IN)	SOIL DESCRIPTION AND OTHER DATA		PID
0.0								
2.5					3'	Sandy gravel building pad fill	dry	6.2
5.0								8
7.5					3'			7.9
								5.1
10.0		B13 9-10						20.1
					3'	Gray sandy gravel	moist	
12.5		B13 11-13					very moist	49.5
							saturated	
						End of Boring @13'		
15.0								
17.5								
20.0								

NOTES: 0.0' Elevation is relative to local ground surface, collected sample SB17-SC50 and SB17-SC51 (dup) at 1410 & 1415 from 0-2', collect sample S-TSP4 at 1510 from 5-6', well screen at 6-10'

NORTECH Environmental and Engineering Consultants Test Boring Log

PROJECT: **NAPA**
LOCATION: **1937 Van Horn Road,Fairbanks, Alaska**

JOB NO.	11-1042
HOLE NO.	B14
SHEET	1
START DATE	11-Jun-11
FINISH DATE	11-Jun-11
DRILLER	Paul
HELPER	Leed
INSPECTOR	Andrew/Ron

	CASING		SAMPLE	CORE
TYPE				
SIZE (ID)				
HAMMER WT				
HAMMER FALL				

GROUNDWATER		DEPTH TO		
DATE	TIME	WATER	BOTTOM	BOTTOM OF HOLE

DEPTH IN FEET	CASING BLOWS PER FOOT	LAB SAMPLE NO	SAMPLE DEPTH (FT)	SAMPLE BLOWS PER 6 INCHES	RECOVERY (IN)	SOIL DESCRIPTION AND OTHER DATA		PID
0.0						4" Chip sealed asphaltic concrete		4.7
2.5		B14 2-4			2.5'	Sandy gravel building pad fill	dry	7.1
5.0								5.7
								4.7
					4'	Tan to gray silty sand	very cold frozen	6.3
7.5						Mottled tan/gray very fine sandy silt	frozen	7.1
								4.3
10.0		B14-9-11			4'	Grading to medium gray sand		6.7
						Mottled tan/gray very fine sandy silt		6.2
						Increasing sand	very moist	5.4
12.5						Gray sandy gravel	saturated	4.1
						End of Boring @ 13'		
15.0								
17.5								
20.0								

NOTES: 0.0' Elevation is relative to local ground surface, collected sample SB17-SC50 and SB17-SC51 (dup) at 1410 & 1415 from 0-2', collect sample S-TSP4 at 1510 from 5-6', well screen at 6-10'

NORTECH Environmental and Engineering Consultants Test Boring Log

PROJECT: **NAPA**
LOCATION: **1937 Van Horn Road, Fairbanks, Alaska, SE Ditch (425, 87.5)**

JOB NO.	11-1042
HOLE NO.	B15
SHEET	1
START DATE	27-Sep-11
FINISH DATE	27-Sep-11
DRILLER	Scott/GeoTek
HELPER	Paul
INSPECTOR	Andrew/Stephanie

	CASING		SAMPLE	CORE
TYPE				
SIZE (ID)				
HAMMER WT				
HAMMER FALL				

GROUNDWATER		DEPTH TO		
DATE	TIME	WATER	BOTTOM	BOTTOM OF HOLE

DEPTH IN FEET	CASING BLOWS PER FOOT	LAB SAMPLE NO	SAMPLE DEPTH (FT)	SAMPLE BLOWS PER 6 INCHES	RECOVERY (IN)	SOIL DESCRIPTION AND OTHER DATA	PID
0.0		SB15 - SC48			3.75'	vegetative matter	2.5
						silts and fines wet	
2.5						silty sands saturated	2.3
5.0					4'		1.9
						peat/organics saturated	
7.5						silty sands wet	1.8
						sand and gravel wet	
						End of boring @ 8.5'	
10.0							
12.5							
15.0							
17.5							
20.0							

NOTES: 0.0' Elevation is relative to local ground surface, collected sample SB17-SC50 and SB17-SC51 (dup) at 1410 & 1415 from 0-2', collect sample S-TSP4 at 1510 from 5-6', well screen at 6-10'

NORTECH Environmental and Engineering Consultants Test Boring Log

PROJECT: **NAPA**
LOCATION: **1937 Van Horn Road, Fairbanks, Alaska, SE ditch (287.5,75)**

JOB NO.	11-1042
HOLE NO.	B16
SHEET	1
START DATE	27-Sep-11
FINISH DATE	27-Sep-11
DRILLER	Scott/GeoTek
HELPER	Paul
INSPECTOR	Andrew/Stephanie

	CASING	SAMPLE	CORE
TYPE			
SIZE (ID)			
HAMMER WT			
HAMMER FALL			

GROUNDWATER		DEPTH TO		
DATE	TIME	WATER	BOTTOM	BOTTOM OF HOLE
9/27	1145	6.5'		

DEPTH IN FEET	CASING BLOWS PER FOOT	LAB SAMPLE NO	SAMPLE DEPTH (FT)	SAMPLE BLOWS PER 6 INCHES	RECOVERY (IN)	SOIL DESCRIPTION AND OTHER DATA	PID
0.0						vegetative matter	
					3.5'	silts and fines dry	1.7
2.5						sands and silts dry	2.1
5.0					4.5'	sands and silts saturated	1.7
7.5		SE-TSP3					1.4
						brown peat and silts, organic damp	
10.0					2.5'	gray silty sand	1.5
							1.6
					1.5'	silty sand with gravel saturated	
12.5					1.5'	gravel fill saturated	1.6
15.0					2.5'	silt and sand with gravel saturated	1.6
							3.3
17.5		SB16-SC49			2'	gravel fill saturated	
					1.5'	silty sand with gravel saturated	3.1
20.0							

NOTES: 0.0' Elevation is relative to local ground surface, collected sample SB17-SC50 and SB17-SC51 (dup) at 1410 & 1415 from 0-2', collect sample S-TSP4 at 1510 from 5-6', well screen at 6-10'

NORTECH Environmental and Engineering Consultants Test Boring Log

PROJECT: **NAPA**
LOCATION: **1937 Van Horn Road, Fairbanks, Alaska, South Ditch (187.5,12.5)**

JOB NO.	11-1042
HOLE NO.	B17
SHEET	1
START DATE	27-Sep-11
FINISH DATE	27-Sep-11
DRILLER	Paul/GeoTek
HELPER	GeoTek
INSPECTOR	Andrew/Stephanie

	CASING		SAMPLE	CORE
TYPE				
SIZE (ID)				
HAMMER WT				
HAMMER FALL				

GROUNDWATER		DEPTH TO		
DATE	TIME	WATER	BOTTOM	BOTTOM OF HOLE
9/27	1420	5'		

DEPTH IN FEET	LAB SAMPLE NO	RECOVERY (IN)	SOIL DESCRIPTION AND OTHER DATA	PID
0.0	SB17-SC50 and -SC51	3.5'	vegetative matter	2.9
			gray sandy silt (tight packed) moist	
2.5			gray sandy silt (tight packed) saturated	1.9
5.0	S-TSP4	4'	gray sandy silt (tight packed) saturated	1.7
				1.6
7.5			gray sand with silt saturated	1.4
10.0		4'	some organics	
			gray gravel with rock (loose) saturated	1.5
			gray gravel with sand and rock	
12.5		4'	silty sand with gravel and rock saturated	1.6
15.0			rock - sloughed out below	1.6
		4'	sand and gravel saturated	1.7
			gravel	
17.5			sand with gravel saturated	1.6
20.0				

Columns also printed with no entries: CASING BLOWS PER FOOT, SAMPLE DEPTH (FT), SAMPLE BLOWS PER 6 INCHES.

NOTES: 0.0' Elevation is relative to local ground surface, collected sample SB17-SC50 and SB17-SC51 (dup) at 1410 & 1415 from 0-2', collect sample S-TSP4 at 1510 from 5-6', well screen at 6-10'

NORTECH Environmental and Engineering Consultants Test Boring Log

PROJECT: **NAPA**
LOCATION: **1937 Van Horn Road, Fairbanks, Alaska, East of Warehouse (170,260)**

JOB NO.	11-1042
HOLE NO.	B18
SHEET	1
START DATE	27-Sep-11
FINISH DATE	27-Sep-11
DRILLER	Paul/GeoTek
HELPER	GeoTek
INSPECTOR	Andrew/Stephanie

	CASING		SAMPLE	CORE
TYPE				
SIZE (ID)				
HAMMER WT				
HAMMER FALL				

GROUNDWATER		DEPTH TO		
DATE	TIME	WATER	BOTTOM	BOTTOM OF HOLE
9/27	1525	9'		

DEPTH IN FEET	CASING BLOWS PER FOOT	LAB SAMPLE NO	SAMPLE DEPTH (FT)	SAMPLE BLOWS PER 6 INCHES	RECOVERY (IN)	SOIL DESCRIPTION AND OTHER DATA	PID
0.0							1.9
2.5					3'	gravel with sand moist	1.6
						silty sand moist	
						silty sand with gravel moist	
5.0					4'	sandy silt wet	1.7
						silt with peat wet	
7.5						sandy silt wet	1.7
10.0		TSP5			4'	gray sandy silt saturated	1.4
						silty sand with gravel saturated	1.5
12.5		SB18-SC52			4'	gray silty sand saturated	1.8
15.0							1.3
17.5					4'	gray silty sand saturated	1.5
20.0						gravel with sand saturated	1.5

NOTES: 0.0' Elevation is relative to local ground surface, collected sample SB17-SC50 and SB17-SC51 (dup) at 1410 & 1415 from 0-2', collect sample S-TSP4 at 1510 from 5-6', well screen at 6-10'

NORTECH Environmental and Engineering Consultants Test Boring Log

PROJECT: **NAPA**
LOCATION: **1937 Van Horn Road, Fairbanks, Alaska, North Ditch (162.5,412.5)**

JOB NO.	11-1042
HOLE NO.	B19
SHEET	1
START DATE	27-Sep-11
FINISH DATE	27-Sep-11
DRILLER	Paul/GeoTek
HELPER	GeoTek
INSPECTOR	Andrew/Stephanie

	CASING	SAMPLE	CORE
TYPE			
SIZE (ID)			
HAMMER WT			
HAMMER FALL			

GROUNDWATER DATE	TIME	DEPTH TO WATER	DEPTH TO BOTTOM	DEPTH TO BOTTOM OF HOLE
9/27	900	4.6'		

DEPTH IN FEET	CASING BLOWS PER FOOT	LAB SAMPLE NO	SAMPLE DEPTH (FT)	SAMPLE BLOWS PER 6 INCHES	RECOVERY (IN)	SOIL DESCRIPTION AND OTHER DATA	PID
0.0					3.5'	brown/orange sandy silt saturated	2.0
2.5						brown/orange sandy silt wet	1.8
5.0		N-TSP6			3.5'	sandy silt saturated	1.8
		SB19-SC53				silty sand saturated	2.2
7.5						silty sand with gravel saturated	
					4'	silty sand with some gravel saturated	1.6
10.0						sandy gravel saturated	1.5
12.5						End of Boring @ 12'	
15.0							
17.5							
20.0							

NOTES: 0.0' Elevation is relative to local ground surface, collected sample SB17-SC50 and SB17-SC51 (dup) at 1410 & 1415 from 0-2', collect sample S-TSP4 at 1510 from 5-6', well screen at 6-10'

NORTECH Environmental and Engineering Consultants Test Boring Log

PROJECT: **NAPA**

LOCATION: **1937 Van Horn Road, Fairbanks, Alaska, East Ditch (312.5,412.5)**

JOB NO.	11-1042
HOLE NO.	B20
SHEET	1
START DATE	27-Sep-11
FINISH DATE	27-Sep-11
DRILLER	Scott/GeoTek
HELPER	Paul/GeoTek
INSPECTOR	Andy/Steph

	CASING		SAMPLE	CORE
TYPE				
SIZE (ID)				
HAMMER WT				
HAMMER FALL				

GROUNDWATER		DEPTH TO		
DATE	TIME	WATER	BOTTOM	BOTTOM OF HOLE
9/27	1000	3.8'		

DEPTH IN FEET	CASING BLOWS PER FOOT	LAB SAMPLE NO	SAMPLE DEPTH (FT)	SAMPLE BLOWS PER 6 INCHES	RECOVERY (IN)	SOIL DESCRIPTION AND OTHER DATA	PID
0.0						sand and silt moist	1.9
						silt moist	
2.5		SB20-SC54			3.5'	silt and sand wet	2.1
5.0		NE-TSP7				sand and silt saturated	1.8
					4'	silt and sand saturated	
7.5						silt, sand, and gravel saturated	1.9
10.0					4'	silt and sand saturated	1.8
						silt and sandy gravel saturated	1.7
12.5						silt and sand saturated	
					4'	silt, sand, and gravel saturated	1.6
15.0							1.7
						End of Boring @16'	
17.5							
20.0							

NOTES: 0.0' Elevation is relative to local ground surface, collected sample SB17-SC50 and SB17-SC51 (dup) at 1410 & 1415 from 0-2', collect sample S-TSP4 at 1510 from 5-6', well screen at 6-10'

NORTECH Environmental and Engineering Consultants Test Boring Log

PROJECT: **NAPA**
LOCATION: **1937 Van Horn Road, Fairbanks, Alaska, Northwest Ditch (-137.5,412.5)**

JOB NO.	11-1042
HOLE NO.	B21
SHEET	1
START DATE	28-Sep-11
FINISH DATE	28-Sep-11
DRILLER	Paul/GeoTek
HELPER	GeoTek
INSPECTOR	Andrew/Stephanie

	CASING	SAMPLE	CORE
TYPE			
SIZE (ID)			
HAMMER WT			
HAMMER FALL			

GROUNDWATER		DEPTH TO		
DATE	TIME	WATER	BOTTOM	BOTTOM OF HOLE
9/28	1345	5'		

DEPTH IN FEET	CASING BLOWS PER FOOT	LAB SAMPLE NO	SAMPLE DEPTH (FT)	SAMPLE BLOWS PER 6 INCHES	RECOVERY (IN)	SOIL DESCRIPTION AND OTHER DATA	PID
0.0					3.5'	brown sandy silt with rocks moist	0.9
2.5						dark brown/black organics	1.7
						brown peat moist	
5.0		SB21-SC55			4'	brown sandy silt with organics wet	2.4
7.5						gray sandy silt saturated	1.6
					4'	gray sandy silt saturated	1.1
10.0						gray silty sand saturated	
		NW-TSP10				silty sand gravel fill saturated	1.1
12.5						End of Boring @ 12'	
15.0							
17.5							
20.0							

NOTES: 0.0' Elevation is relative to local ground surface, collected sample SB17-SC50 and SB17-SC51 (dup) at 1410 & 1415 from 0-2', collect sample S-TSP4 at 1510 from 5-6', well screen at 6-10'

NORTECH Environmental and Engineering Consultants Test Boring Log

PROJECT: **NAPA**

LOCATION: **1937 Van Horn Road, Fairbanks, Alaska, West Ditch (15,125)**

JOB NO.	11-1042
HOLE NO.	B22
SHEET	1
START DATE	28-Sep-11
FINISH DATE	28-Sep-11
DRILLER	Paul/GeoTek
HELPER	GeoTek
INSPECTOR	Andrew/Stephanie

	CASING		SAMPLE	CORE
TYPE				
SIZE (ID)				
HAMMER WT				
HAMMER FALL				

GROUNDWATER		DEPTH TO		
DATE	TIME	WATER	BOTTOM	BOTTOM OF HOLE
9/28	1130	3.8'		

DEPTH IN FEET	CASING BLOWS PER FOOT	LAB SAMPLE NO	SAMPLE DEPTH (FT)	SAMPLE BLOWS PER 6 INCHES	RECOVERY (IN)	SOIL DESCRIPTION AND OTHER DATA	PID
0.0						organic matter	
					3.5'	light brown silty sand moist	1.6
2.5		SB22-SC56				sandy silt with gravel moist 1" lens of peat	2.6
		W-TSP8 and W-TSP9 (dup)				silty sand moist 4" lens of dark brown peat	1.7
5.0					4'	gray silty sand wet to saturated	1.8
7.5						silty sand saturated	1.7
						silty sand with gravel saturated	
10.0					4'	sandy silt with peat moist	1.8
						silty sand	
						silty sand with gravel saturated	
12.5						End of boring @ 12'	
15.0							
17.5							
20.0							

NOTES: 0.0' Elevation is relative to local ground surface, collected sample SB17-SC50 and SB17-SC51 (dup) at 1410 & 1415 from 0-2', collect sample S-TSP4 at 1510 from 5-6', well screen at 6-10'

Appendix 4

Site Photographs

Photo 1: *5/27/2011 - South side of NAPA facility during initial visit.*

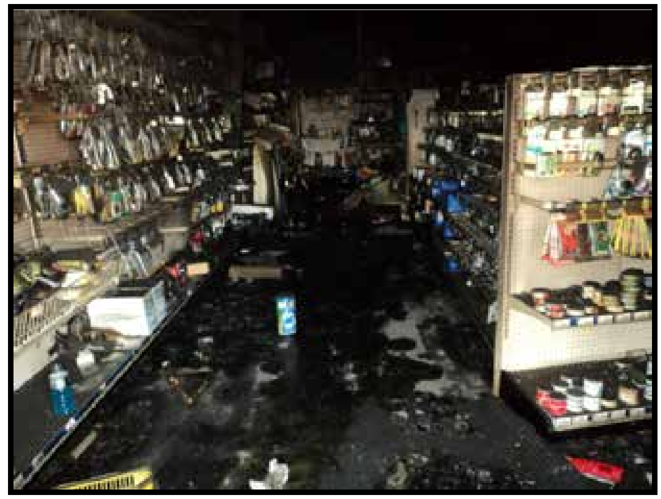


Photo 2: *5/27/2011 – Typical retail conditions.*

Photo 3: *5/27/2011 – West side area conditions.*

Photo 4:*5/29/2011 – South end warehouse conditions.*

Photo 5: *5/27/2011 – South warehouse door sludge containment.*

Photo 6: *5/27/2011 – East warehouse door sludge containment.*

Photo 7: *5/27/2011 – Impacted ground from firefighting water release on the south side of the property.*

Photo 8: *5/27/2011 – Collected firefighting water in the South Ditch.*

Photo 9: *5/28/2011 – "Stinger" collecting floating phase contaminants from the South Ditch.*

Photo 10: *5/28/2011 – Direct Vac-truck oil and sludge phase collection from south driveway.*

Photo 11: *5/29/2011 – Southeast perimeter Ditch surface contaminant absorption.*

Photo 12: *5/27/2011 – South Driveway soil surface absorption.*

Photo 13: *5/29/2011 – West building perimeter sludge and surface migration control.*

Photo 14: *5/29/2011 – Initial containment trench near the southeast corner of the building.*

Photo 15: *6/2/2011 – Southern soil stockpile construction.*

Photo 16: *6/3/2011 – North Ditch after excavation with hazing tape.*

Photo 17: *6/2/2011 – South driveway and southern waste storage areas after initial surface scraping.*

Photo 18: *7/6/2011 – West Ditch after initial excavation and installation of monitoring wells (MW2 in foreground).*

Photo 19: *6/3/2011 - Eastern stockpile excavated from perimeter ditches.*

Photo 20: *6/9/2011 – Southern stockpiles with soil and vehicles (right) and salvageable materials (left).*

Photo 21: *6/20/2011 - Interim groundwater collection efforts two lots away.*

Photo 22: *6/9/2011 – Initial building perimeter soil boring.*

Photo 23: *6/11/2011 – Interior warehouse cleanup efforts.*

Photo 24: *6/20/2011 – Interior retail area cleanup efforts.*

Photo 25: *8/18/2011 - 5Y sack storage area with containerized building waste.*

Photo 26: *7/9/2011 – Interior supersack storage area with interior building waster.*

Photo 27: *9/20/2011 – Southeast Ditch characterization.*

Photo 28: *9/25/2011 – South Driveway and waste storage area characterization.*

Photo 29: *9/20/2011 – Typical field screening sample.*

Photo 30: *9/23/2011 – Field duplicate soil sample for laboratory analysis.*

Photo 31: *9/22/2011 – Typical surface stain corrective action.*

Photo 32:

Photo 33: *9/22/2011 – Looking west across Pit 3 through Pit 6.*

Photo 34: *9/26/2011 – Typical pit soil sample collection for lab analysis.*

Photo 35: *9/28/2011 – Typical perimeter ditch soil-boring efforts.*

Photo 36: *9/27/2011 – Typical perimeter ditch groundwater sampling.*

Photo 37: *10/6/2011 – Surface impacts from oily sludge at southern overhead door.*

Photo 38: *10/12/2011 – Removal of southern apron for corrective action and characterization.*

Photo 39: *10/12/2011 – Typical excavation for building perimeter profile characterization.*

Photo 40: *10/12/2011 - Build perimeter corrective action on south side of building.*

Photo 41: *10/16/2011 – Typical building perimeter field screening.*

Photo 42: *10/12/2011 – Visible stained soils remaining within structural prism.*

Photo 43: *10/4/2011 – Removal of East Driveway RAP.*

Photo 44: *8/26/2011 – Loading interior building waste for transport.*

Photo 45: *9/26/2011 – Typical soil loading for thermal remediation.*

Photo 46: *9/29/2011-Typical concrete floor section after cleaning.*

Photo 47: *10/3/2011North Driveway gate installation.*

Photo 48: *10/11/2011 – Disconnecting water line near the main for winterization efforts.*

Photo 49: *10/11/2011 – Corrective action at 1:1 slope toward the West Ditch.*

Photo 50: *10/13/2011 - Western and bottom limits of West Ditch excavation (MW2 in center).*

Photo 51: *10/13/2011 – Corrective action near the south end of the West Ditch.*

Photo 52: *10/17/2011 – Stockpiled soils from West Ditch.*

Photo 53: *10/17/2011 - Looking south along the West Ditch with MW1 in foreground*

Photo 54: *9/17/2011 – West Ditch soil sample collection. West Southern Ditch is visible on right.*

Photo 55: *10/17/2011 – Vapor extraction and bedding gravel across the south end of the building.*

Photo 56: *10/18/2011 - Typical vapor barrier installation above piping on the eastern side of the building.*

Photo 57: *10/17/2011 – Typical sealing of vapor barrier onto concrete pad.*

Photo 58: *10/18/2011 – Backfill and 95% compaction above the vapor barrier on the south side of the building.*

Photo 59: *10/17/2011 - Typical site-wide backfill and compaction to return pits and other areas to previous grade.*

Photo 60: *10/18/2011 – Typical final grade prior to building demolition.*

Appendix 5

Conceptual Site Model

Print Form

Appendix A - Human Health Conceptual Site Model Scoping Form and Standardized Graphic

Site Name: NAPA Auto and Truck Parts 1937 Van Horn Road

File Number: ADEC Spill Number 11309914601

Completed by: Peter Beardsley (NORTECH)

Introduction

The form should be used to reach agreement with the Alaska Department of Environmental Conservation (DEC) about which exposure pathways should be further investigated during site characterization. From this information, summary text about the CSM and a graphic depicting exposure pathways should be submitted with the site characterization work plan and updated as needed in later reports.

General Instructions: Follow the italicized instructions in each section below.

1. General Information:

Sources *(check potential sources at the site)*

- ☐ USTs
- ☐ ASTs
- ☐ Dispensers/fuel loading racks
- ☐ Drums
- ☐ Vehicles
- ☐ Landfills
- ☐ Transformers
- ☒ Other: Building Fire

Release Mechanisms *(check potential release mechanisms at the site)*

- ☐ Spills
- ☐ Leaks
- ☒ Direct discharge
- ☐ Burning
- ☐ Other:

Impacted Media *(check potentially-impacted media at the site)*

- ☒ Surface soil (0-2 feet bgs*)
- ☒ Subsurface soil (>2 feet bgs)
- ☒ Air
- ☐ Sediment
- ☒ Groundwater
- ☐ Surface water
- ☐ Biota
- ☐ Other:

Receptors *(check receptors that could be affected by contamination at the site)*

- ☐ Residents (adult or child)
- ☒ Commercial or industrial worker
- ☒ Construction worker
- ☐ Subsistence harvester (i.e. gathers wild foods)
- ☐ Subsistence consumer (i.e. eats wild foods)
- ☒ Site visitor
- ☒ Trespasser
- ☐ Recreational user
- ☐ Farmer
- ☐ Other:

* bgs - below ground surface

2. **Exposure Pathways:** *(The answers to the following questions will identify complete exposure pathways at the site. Check each box where the answer to the question is "yes".)*

a) Direct Contact -

1. Incidental Soil Ingestion

Are contaminants present or potentially present in surface soil between 0 and 15 feet below the ground surface? (Contamination at deeper depths may require evaluation on a site-specific basis.) ☒

If the box is checked, label this pathway complete: Complete

Comments:

See Notes on Page 7

2. Dermal Absorption of Contaminants from Soil

Are contaminants present or potentially present in surface soil between 0 and 15 feet below the ground surface? (Contamination at deeper depths may require evaluation on a site specific basis.) ☒

Can the soil contaminants permeate the skin (see Appendix B in the guidance document)? ☒

If both boxes are checked, label this pathway complete: Complete

Comments:

See Notes on Page 7

b) Ingestion -

1. Ingestion of Groundwater

Have contaminants been detected or are they expected to be detected in the groundwater, or are contaminants expected to migrate to groundwater in the future? ☒

Could the potentially affected groundwater be used as a current or future drinking water source? Please note, only leave the box unchecked if DEC has determined the ground-water is not a currently or reasonably expected future source of drinking water according to 18 AAC 75.350. ☒

If both boxes are checked, label this pathway complete: Complete

Comments:

See Notes on Page 7

2. Ingestion of Surface Water

Have contaminants been detected or are they expected to be detected in surface water, or are contaminants expected to migrate to surface water in the future? ☐

Could potentially affected surface water bodies be used, currently or in the future, as a drinking water source? Consider both public water systems and private use (i.e., during residential, recreational or subsistence activities). ☐

If both boxes are checked, label this pathway complete: Incomplete

Comments:

3. Ingestion of Wild and Farmed Foods

Is the site in an area that is used or reasonably could be used for hunting, fishing, or harvesting of wild or farmed foods? ☐

Do the site contaminants have the potential to bioaccumulate (see Appendix C in the guidance document)? ☐

Are site contaminants located where they would have the potential to be taken up into biota? (i.e. soil within the root zone for plants or burrowing depth for animals, in groundwater that could be connected to surface water, etc.) ☐

If all of the boxes are checked, label this pathway complete: Incomplete

Comments:

c) Inhalation-

1. Inhalation of Outdoor Air

Are contaminants present or potentially present in surface soil between 0 and 15 feet below the ground surface? (Contamination at deeper depths may require evaluation on a site specific basis.) ☒

Are the contaminants in soil volatile (see Appendix D in the guidance document)? ☒

If both boxes are checked, label this pathway complete: Complete

Comments:

See Notes on Page 7

2. Inhalation of Indoor Air

Are occupied buildings on the site or reasonably expected to be occupied or placed on the site in an area that could be affected by contaminant vapors? (within 30 horizontal or vertical feet of petroleum contaminated soil or groundwater; within 100 feet of non-petroleum contaminted soil or groundwater; or subject to "preferential pathways," which promote easy airflow like utility conduits or rock fractures) ☒

Are volatile compounds present in soil or groundwater (see Appendix D in the guidance document)? ☒

If both boxes are checked, label this pathway complete: Complete

Comments:

See Notes on Page 7

3. **Additional Exposure Pathways:** *(Although there are no definitive questions provided in this section, these exposure pathways should also be considered at each site. Use the guidelines provided below to determine if further evaluation of each pathway is warranted.)*

Dermal Exposure to Contaminants in Groundwater and Surface Water

Dermal exposure to contaminants in groundwater and surface water may be a complete pathway if:

- o Climate permits recreational use of waters for swimming.
- o Climate permits exposure to groundwater during activities, such as construction.
- o Groundwater or surface water is used for household purposes, such as bathing or cleaning.

Generally, DEC groundwater cleanup levels in 18 AAC 75, Table C, are assumed to be protective of this pathway.

Check the box if further evaluation of this pathway is needed: ☐

Comments:

Inhalation of Volatile Compounds in Tap Water

Inhalation of volatile compounds in tap water may be a complete pathway if:

- o The contaminated water is used for indoor household purposes such as showering, laundering, and dish washing.
- o The contaminants of concern are volatile (common volatile contaminants are listed in Appendix D in the guidance document.)

Generally, DEC groundwater cleanup levels in 18 AAC 75, Table C, are assumed to be protective of this pathway.

Check the box if further evaluation of this pathway is needed: ☐

Comments:

Inhalation of Fugitive Dust

Inhalation of fugitive dust may be a complete pathway if:

- Nonvolatile compounds are found in the top 2 centimeters of soil. The top 2 centimeters of soil are likely to be dispersed in the wind as dust particles.
- Dust particles are less than 10 micrometers (Particulate Matter - PM_{10}). Particles of this size are called respirable particles and can reach the pulmonary parts of the lungs when inhaled.
- Chromium is present in soil that can be dispersed as dust particles of any size.

Generally, DEC direct contact soil cleanup levels in Table B1 of 18 AAC 75 are protective of this pathway because it is assumed most dust particles are incidentally ingested instead of inhaled to the lower lungs. The inhalation pathway only needs to be evaluated when very small dust particles are present (e.g., along a dirt roadway or where dusts are a nuisance). This is not true in the case of chromium. Site specific cleanup levels will need to be calculated in the event that inhalation of dust containing chromium is a complete pathway at a site.

Check the box if further evaluation of this pathway is needed: ☐

Comments:

Direct Contact with Sediment

This pathway involves people's hands being exposed to sediment, such as during some recreational, subsistence, or industrial activity. People then incidentally ingest sediment from normal hand-to-mouth activities. In addition, dermal absorption of contaminants may be of concern if the the contaminants are able to permeate the skin (see Appendix B in the guidance document). This type of exposure should be investigated if:

- Climate permits recreational activities around sediment.
- The community has identified subsistence or recreational activities that would result in exposure to the sediment, such as clam digging.

Generally, DEC direct contact soil cleanup levels in 18 AAC 75, Table B1, are assumed to be protective of direct contact with sediment.

Check the box if further evaluation of this pathway is needed: ☐

Comments:

4. Other Comments *(Provide other comments as necessary to support the information provided in this form.)*

The former NAPA building has been removed following the removal of the solid waste from within the building and cleaning of the concrete pad floor. Solid and hazardous waste materials on site have been properly handled and transported to an appropriate storage/disposal facility.

Corrective action to remove the contaminated soils on Site, with the exception of soils within the structural prism of the concrete pad, occurred during cleanup and characterization activities. Remaining areas with contamination and the contaminant concentrations in those locations are discussed in the report to which this CSM is attached.

Engineering controls installed at the site include the concrete slab, a vapor barrier and perforated piping system at the building foundation, and impermeable RAP surfacing around the north, east, and south sides of the building. These prevent direct contact with contaminants at most locations.

Dermal contact is included in this CSM due to the glycols, although the available evidence indicates that the limited amount of glycol releases has already been remediated through natural attenuation.

Ingestion of groundwater is included in this CSM because Fairbanks is a sole-source aquifer and does not have an ordinance preventing use of groundwater by properties that are connected to the community water system. All properties in the area are connected to the community water system, but several still have wells in various states of repair as described in the report.

Inhalation of outdoor air is marked as complete, but the physical barriers will significantly reduce the potential for contaminants to migrate to the outdoor air. Ambient conditions indicate that vapor accumulation around the building is unlikely.

Inhalation of indoor air is possible, but the physical barriers will significantly reduce the potential for vapor migration into the building. The existing perforated piping system should be used for additional evaluation of the potential for vapor intrusion if necessary. The quantity of petroleum products in the building will make interior testing impossible. Additionally, drilling through the slab for vapor or soil assessment is not recommended as this could create a conduit for materials in the building to reach the subsurface.

The original building has been replaced with a substantially similar building.

HUMAN HEALTH CONCEPTUAL SITE MODEL GRAPHIC FORM

Site: NAPA Auto and Truck Parts 1937 Van Horn Road
Fairbanks, Alaska

Completed By: Peter Beardsley
Date Completed: 09/29/12

***Instructions**: Follow the numbered directions below. Do not consider contaminant concentrations or engineering/land use controls when describing pathways.*

(1) *Check the media that could be directly affected by the release.*

(2) *For each medium identified in (1), follow the top arrow and check possible transport mechanisms. Check additional media under (1) if the media acts as a secondary source.*

(3) *Check all exposure media identified in (2).*

(4) *Check all pathways that could be complete. The pathways identified in this column **must** agree with Sections 2 and 3 of the Human Health CSM Scoping Form.*

(5) *Identify the receptors potentially affected by each exposure pathway: Enter "C" for current receptors, "F" for future receptors, "C/F" for both current and future receptors, or "I" for insignificant exposure.*

Media / Transport Mechanisms

Media	Transport Mechanism	Check
☑ Surface Soil (0-2 ft bgs)	Direct release to surface soil	check soil
	✓ Migration to subsurface	check soil
	✓ Migration to groundwater	check groundwater
	✓ Volatilization	check air
	☐ Runoff or erosion	check surface water
	☐ Uptake by plants or animals	check biota
	☐ Other (list):______	
☐ Subsurface Soil (2-15 ft bgs)	Direct release to subsurface soil	check soil
	☐ Migration to groundwater	check groundwater
	☐ Volatilization	check air
	☐ Uptake by plants or animals	check biota
	☐ Other (list):______	
☐ Ground-water	Direct release to groundwater	check groundwater
	☐ Volatilization	check air
	☐ Flow to surface water body	check surface water
	☐ Flow to sediment	check sediment
	☐ Uptake by plants or animals	check biota
	☐ Other (list):______	
☐ Surface Water	Direct release to surface water	check surface water
	☐ Volatilization	check air
	☐ Sedimentation	check sediment
	☐ Uptake by plants or animals	check biota
	☐ Other (list):______	
☐ Sediment	Direct release to sediment	check sediment
	☐ Resuspension, runoff, or erosion	check surface water
	☐ Uptake by plants or animals	check biota
	☐ Other (list):______	

Exposure Media / Exposure Pathway/Route / Current & Future Receptors

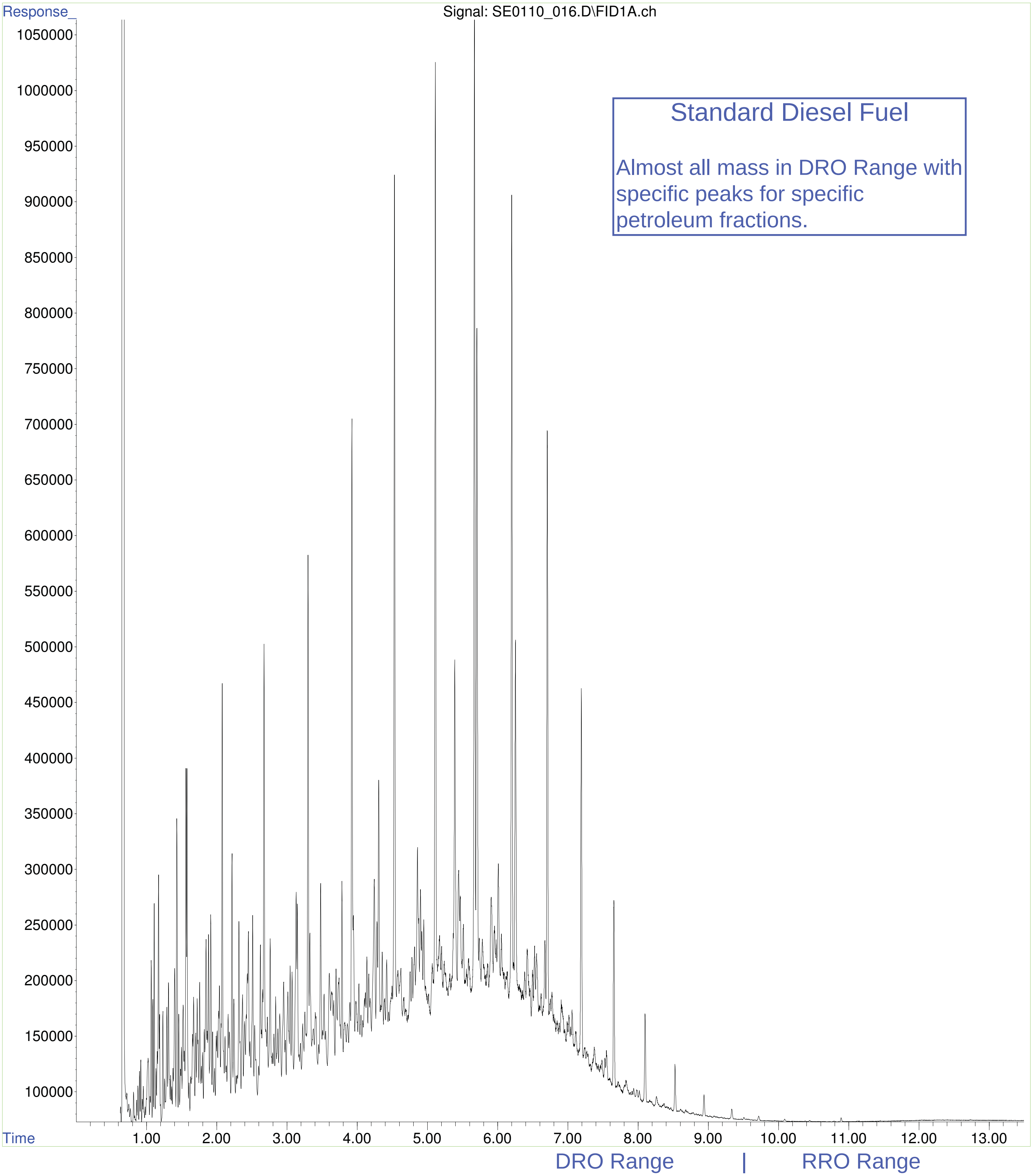
Exposure Media	Exposure Pathway/Route	Residents (adults or children)	Commercial or industrial workers	Site visitors, trespassers, or recreational users	Construction workers	Farmers or subsistence harvesters	Subsistence consumers	Other
☑ soil	✓ Incidental Soil Ingestion		c/f	c/f	c/f			
	✓ Dermal Absorption of Contaminants from Soil		c/f	c/f	c/f			
	☐ Inhalation of Fugitive Dust							
☑ groundwater	✓ Ingestion of Groundwater		f	f	f			
	☐ Dermal Absorption of Contaminants in Groundwater							
	☐ Inhalation of Volatile Compounds in Tap Water							
☑ air	✓ Inhalation of Outdoor Air		c/f	c/f	c/f			
	✓ Inhalation of Indoor Air		c/f	c/f	c/f			
	☐ Inhalation of Fugitive Dust							
☐ surface water	☐ Ingestion of Surface Water							
	☐ Dermal Absorption of Contaminants in Surface Water							
	☐ Inhalation of Volatile Compounds in Tap Water							
☐ sediment	☐ Direct Contact with Sediment							
☑ biota	☐ Ingestion of Wild or Farmed Foods							

Revised, 10/01/2010

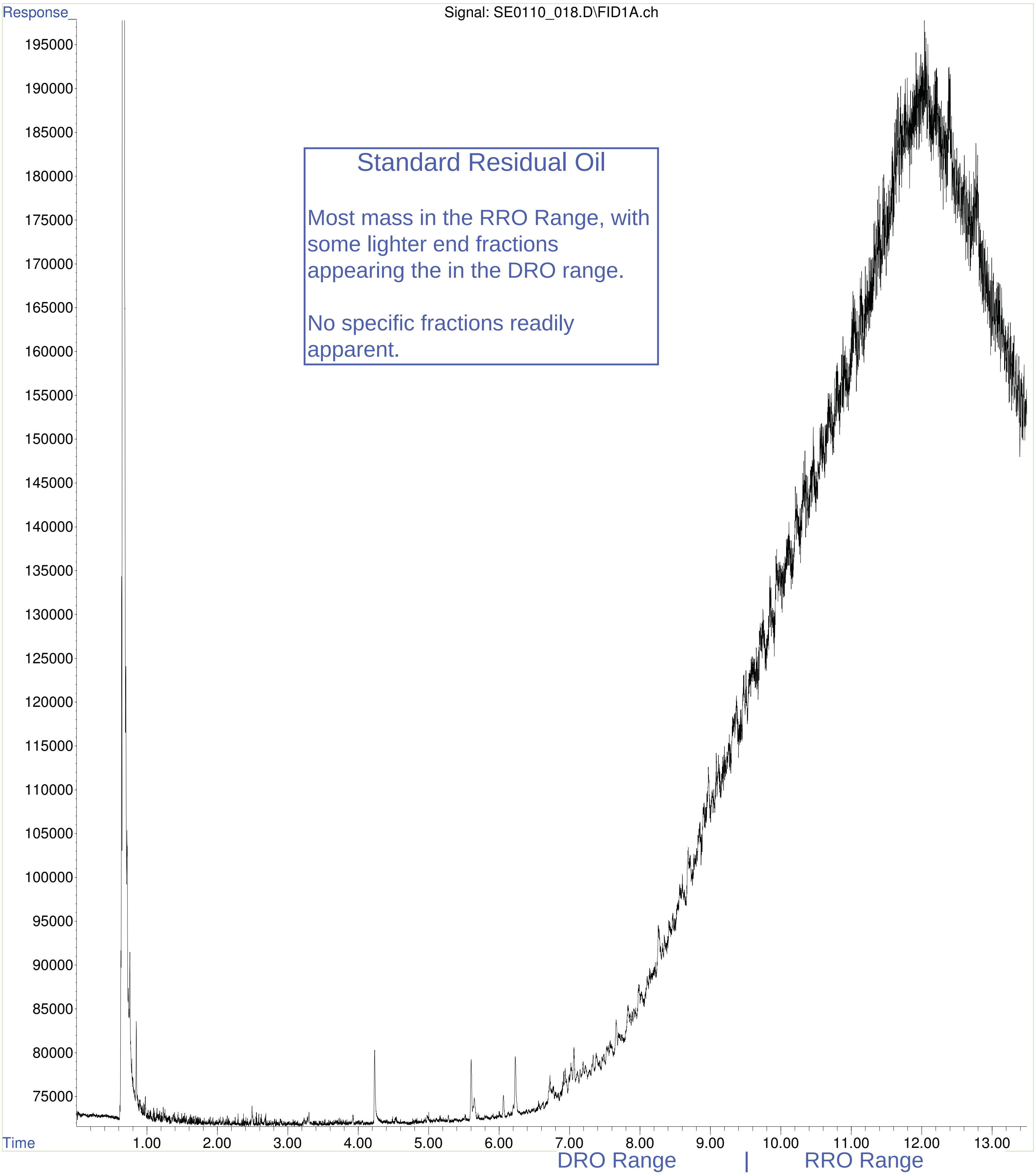
Appendix 6

Laboratory Chromatographs

```
File        :Z:\01\SE\DATA\SE011013\SE0110_016.D
Operator    : EAB
Acquired    : 10 Jan 2013  11:49 am using AcqMethod SE_SVF_HVR_ACQ.M
Instrument :    SE
Sample Name: CCVB
Misc Info   :
Vial Number: 3
```

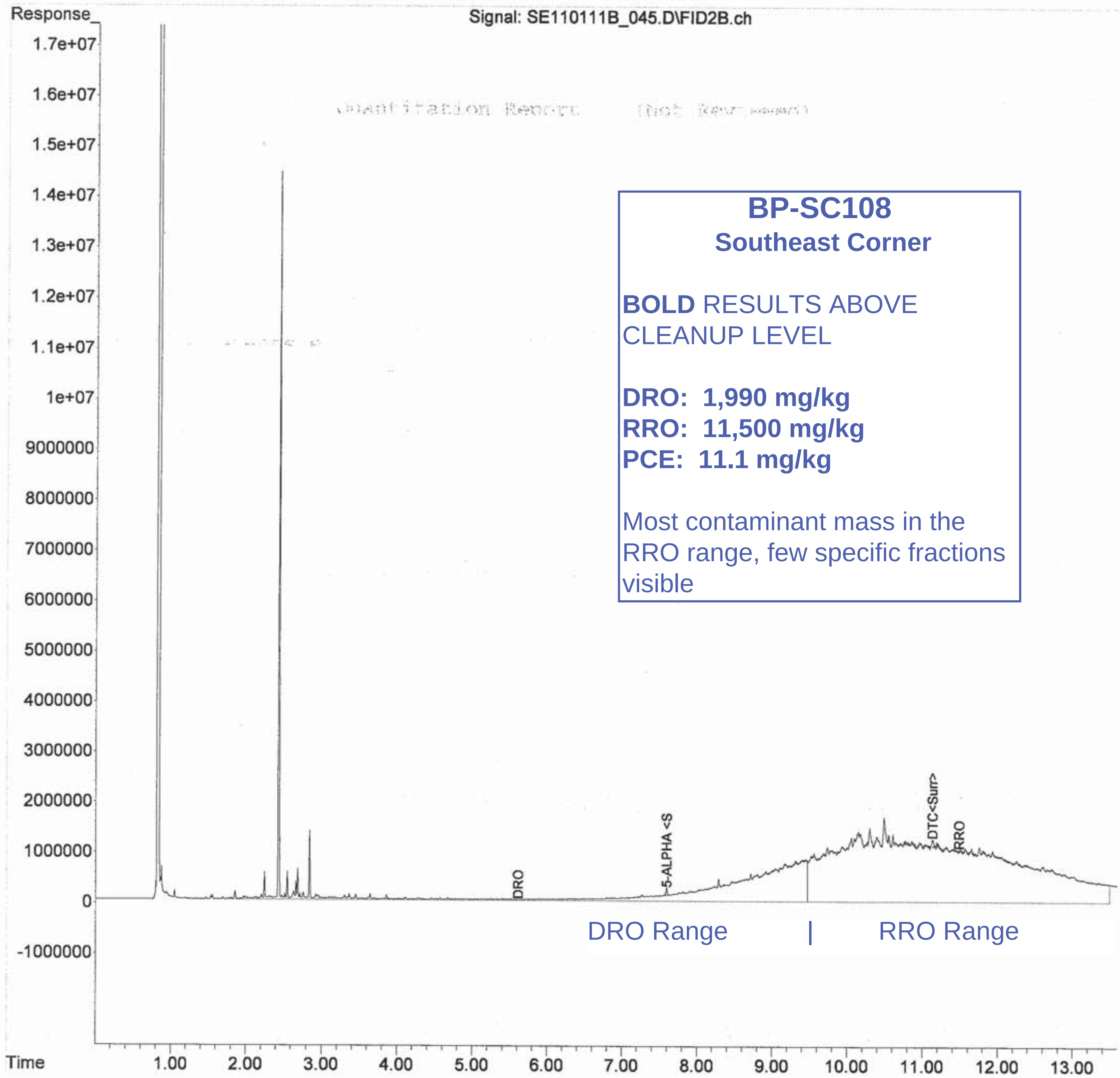


```
File       :Z:\01\SE\DATA\SE011013\SE0110_018.D
Operator   : EAB
Acquired   : 10 Jan 2013  12:10 pm using AcqMethod SE_SVF_HVR_ACQ.M
Instrument :    SE
Sample Name: CCVR
Misc Info  :
Vial Number: 4
```



Quantitation Report (Not Reviewed)

```
Data Path : Z:\2011\11\SE\DATA\110111B.SEC\
Data File : SE110111B_045.D
Signal(s) : FID2B.ch
Acq On    :  2 Nov 2011   1:53 am
Operator  : MCS
Sample    : 1119647001
Misc      : M*2
ALS Vial  : 60   Sample Multiplier: 1

Integration File: events.e
Quant Time: Nov 02 07:30:34 2011
Quant Method : Z:\2011\11\SE\METHOD\SER_102611B.M
Quant Title  : DRO/RRO by Method AK 102/103
QLast Update : Wed Oct 26 17:40:36 2011
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj.  :
Signal Phase :
Signal Info  :
```



```
Data Path : Z:\2011\11\SE\DATA\110111B\
Data File : SE110111B_060.D
Signal(s) : FID1A.ch
Acq On    :  2 Nov 2011   4:20 am
Operator  : MCS
Sample    : 1119647004 *10X
Misc      : RR
ALS Vial  : 22   Sample Multiplier: 10

Integration File: events.e
Quant Time: Nov 02 08:08:56 2011
Quant Method : Z:\2011\11\SE\METHOD\SEF_102711.M
Quant Title  : DRO/RRO by Method AK 102/103
QLast Update : Fri Oct 28 07:13:39 2011
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj.  :
Signal Phase :
Signal Info  :
```

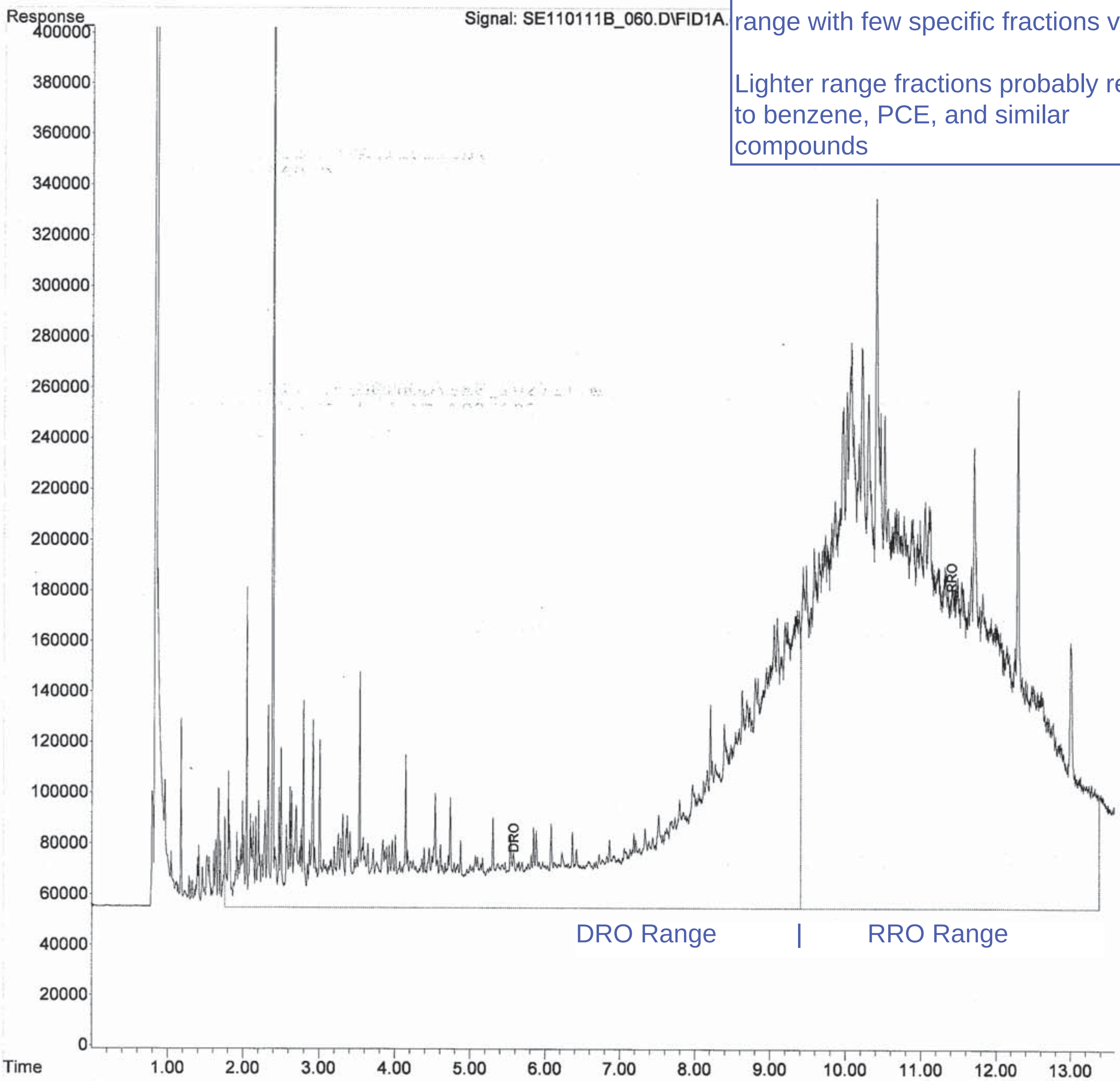
BP-SC111
Southeast Corner

BOLD RESULTS ABOVE CLEANUP LEVEL

DRO: 7,230 mg/kg
RRO: 30,200 mg/kg
PCE: 216 mg/kg
Benzene: 0.0399 mg/kg
TCE: 0.143 mg/kg

Most contaminant mass in the RRO range with few specific fractions visible

Lighter range fractions probably related to benzene, PCE, and similar compounds



Quantitation Report (QT Reviewed)

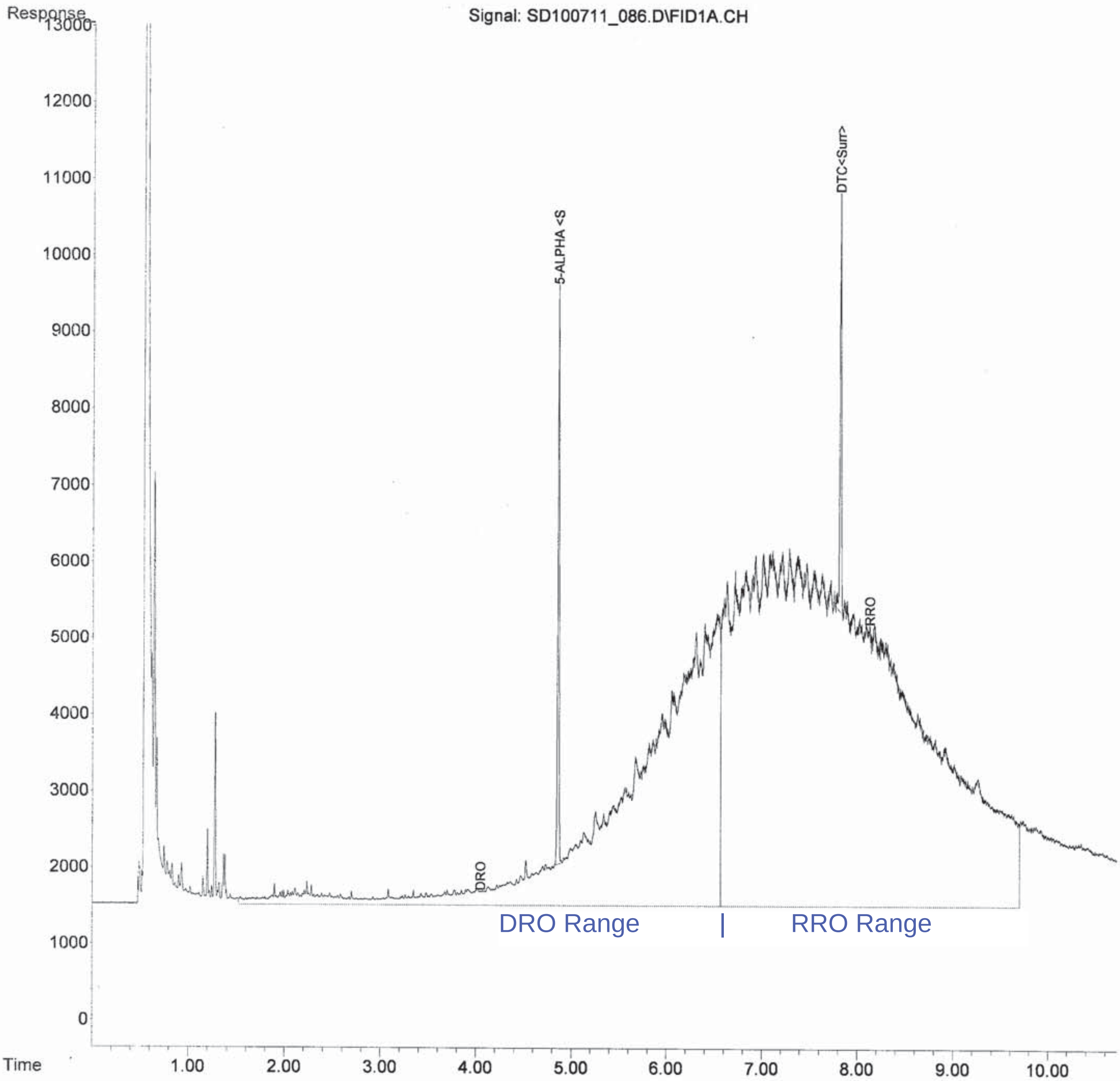
```
Data Path : Z:\2011\10\SD\DATA\100711\
Data File : SD100711_086.D
Signal(s) : FID1A.CH
Acq On    : 08 Oct 2011   8:32 am
Operator  : MCS
Sample    : 1118921008
Misc      : M*2
ALS Vial  : 36   Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 09 13:08:38 2011
Quant Method : Z:\2011\10\SD\METHOD\SDF_100511C.M
Quant Title  : DRO/RRO by Method AK 102/103
QLast Update : Thu Oct 06 10:26:02 2011
Response via : Initial Calibration
Integrator: ChemStation   6890 Scale Mode: Small nois

Volume Inj.  :
Signal Phase :
Signal Info  :
```

SP3-SC41
Stockpile 3 Closure

LAB RESULTS BELOW CLEANUP LEVEL

DRO: 74.1 mg/kg
RRO: 364 mg/kg

Most contaminant mass in the RRO range with few specific fractions visible



Quantitation Report (QT Reviewed)

Data Path : Z:\2011\10\SD\DATA\102311.SEC\
Data File : SD102311_107.D
Signal(s) : FID2B.CH
Acq On : 24 Oct 2011 13:57 pm
Operator : MCS
Sample : 1119647026 WD-SC133
Misc : M*2
ALS Vial : 91 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 25 13:00:33 2011
Quant Method : Z:\2011\10\SD\METHOD\SDR_100511F.M
Quant Title : DRO/RRO by Method AK 102/103
QLast Update : Thu Oct 06 10:36:15 2011
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Small noise

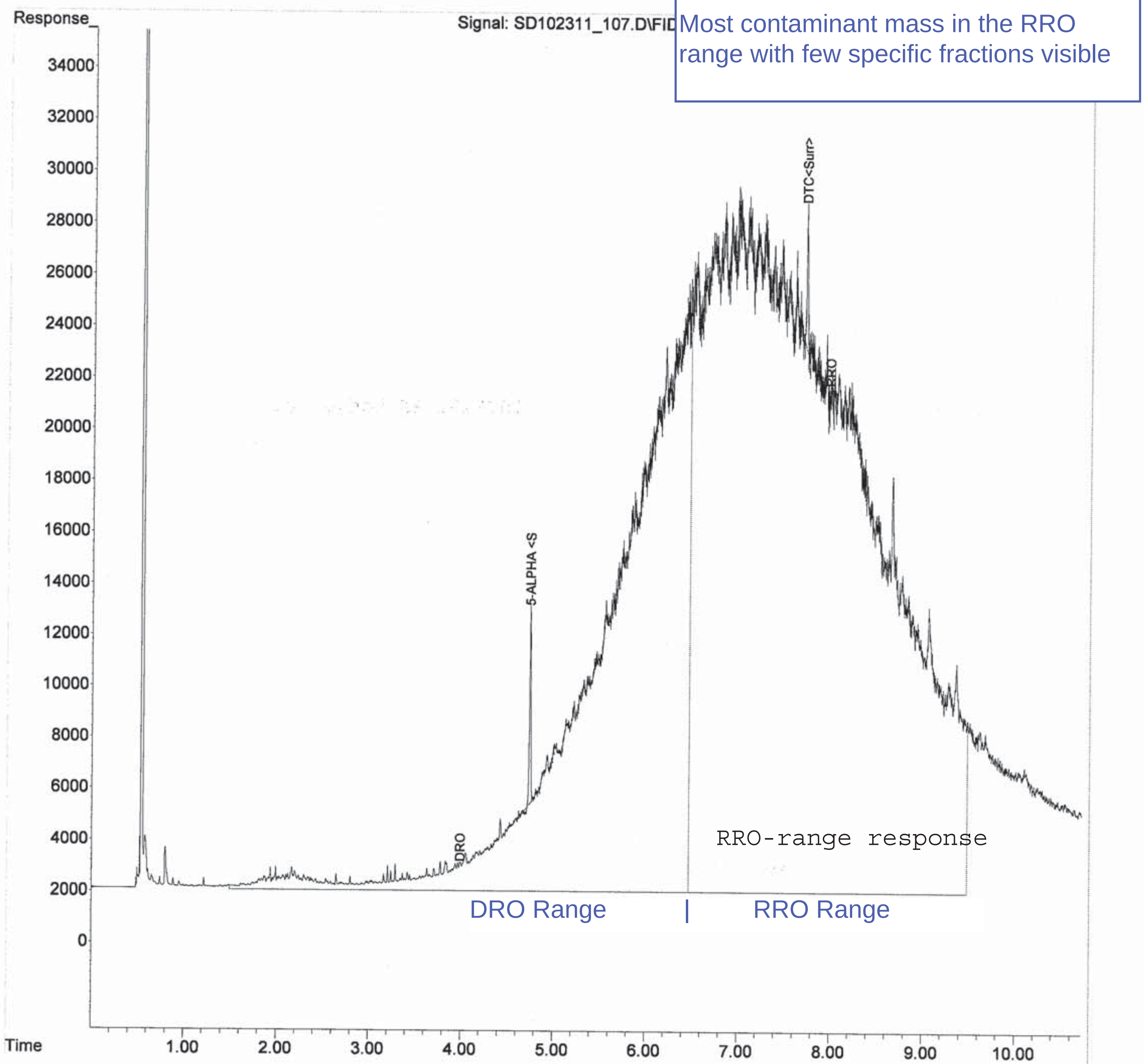
Volume Inj. :
Signal Phase :
Signal Info :

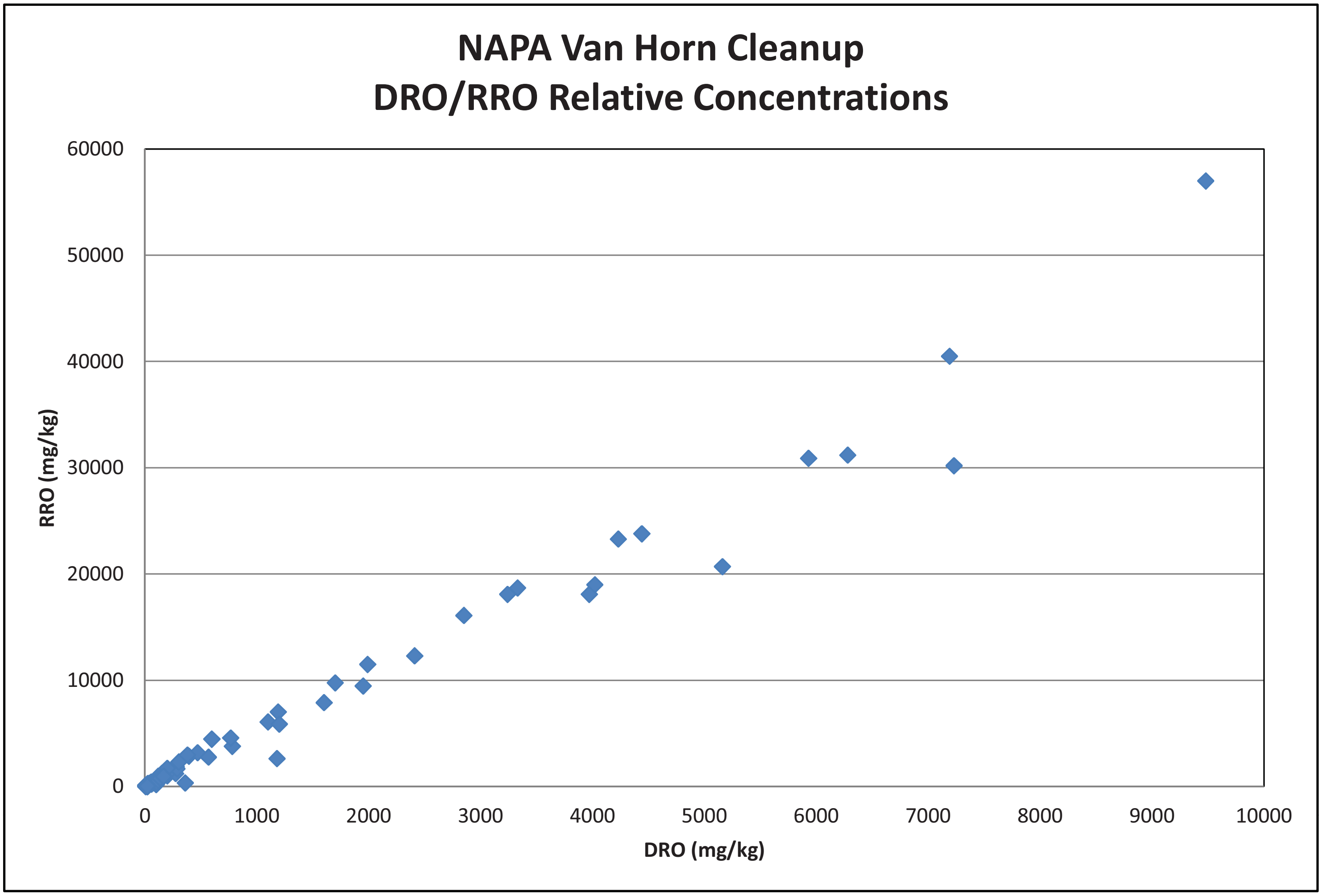
WD-SC133
West Ditch

BOLD RESULTS ABOVE CLEANUP LEVEL

DRO: 780 mg/kg
RRO: 3,790 mg/kg

Most contaminant mass in the RRO range with few specific fractions visible





Comparison of DRO and RRO results indicates that relative proportion of DRO to RRO is very consistent across the full range of concentrations in soil remaining at the NAPA site.