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FINAL

CLEANUP ACTION REPORT

CITY OF MOSES LAKE MAINTENANCE FACILITY

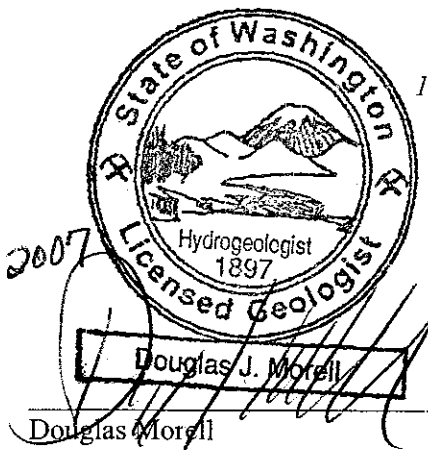
MOSES LAKE, WASHINGTON

Submitted to

City of Moses Lake, Washington

Submitted by

Golder Associates Inc.
18300 NE Union Hill Road, Suite 200
Redmond, Washington 98052



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June 20, 2006

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1.0 INTRODUCTION

1.1 Purpose and Scope

This Cleanup Action Report (CAR) documents the cleanup action at the Moses Lake Maintenance Facility in Moses Lake, Washington (the Site). The cleanup action was conducted in compliance with the Cleanup Action Plan (CAP) (Ecology, 2004), the Engineering Design Report (EDR) (Golder, 2005a), and the Compliance Monitoring Plan (CMP) (Golder, 2005b)

The CAP identified appropriate cleanup levels for the site and points of compliance at which those levels must be attained in soil and groundwater. It also selected a cleanup action for contaminated soils and provided guidance for compliance monitoring to ensure that cleanup levels are met and maintained over the long term.

The EDR presented a set of remedial action construction plans for the site, and the CMP described environmental monitoring to ensure that the selected remedy meets cleanup levels at all points of compliance. The EDR and the CMP are required as part of the site cleanup and monitoring process under the Model Toxics Control Act (MTCA) as established by the regulations set forth in Chapter 173-340 of the Washington Administrative Code (WAC) and in consultation with the Washington Department of Ecology (Ecology).

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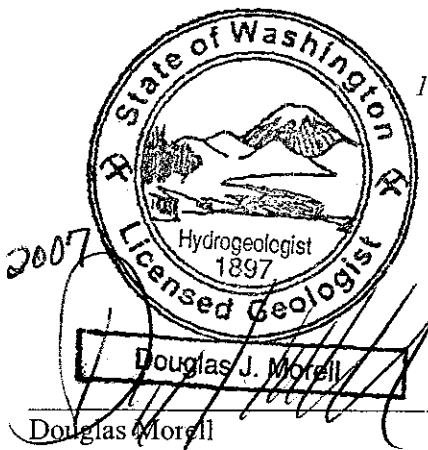

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2.0 SITE DESCRIPTION AND HISTORY

The Site is located at 819 East Penn Street in Moses Lake, Grant County, Washington on a 7.2-acre rectangular City block (Figure 1). The Site is surrounded by a chain link fence and comprises the following three areas:

- Eastern portion: Lot 1 of Municipal Tract #2, Grant County Assessor's parcel number 11-0480-000
- Central portion: Tax #3678, Grant County Assessor's parcel number 11-0309-000
- Western portion: Lot 5 Commercial Plat, Grant County Assessor's parcel number 09-1184-000 and Lot 6 Commercial Plat, Grant County Assessor's parcel number 09-1185-000

The original Moses Lake City Maintenance Facility is located on the eastern 4.7-acres of the property (Figure 2) Buildings on this portion of the property are:

- A maintenance shop on the east side.
- A Cascade natural gas building at the southeast corner
- A Parks Department shop building to the south of the maintenance shop.
- A secure chemical storage area to the south of the maintenance shop
- An office building and asphalt parking area in the north central area.

Activities performed at the original Maintenance Facility site included repair and maintenance of city vehicles, gravel and road material storage, and pesticide and herbicide storage Gasoline and diesel fueling of vehicles occurred at the Site prior to 1992 In 1992, gasoline and diesel storage tanks were removed from the Site. Since this time, all vehicles have been fueled off site

The City of Moses Lake (City) purchased the 2 5 acre property to the west of the established maintenance facility in September 2001 (Figure 2). All but the northeast and southwest corners of the area are surfaced with asphalt. Buildings on the western portion of the property are:

- Three warehouse buildings located at the southwest, northwest, and south sides of the property.
- An office and shop building, previously occupied by Northwest Irrigation

Activities on the western portion of the Site have included fabrication and welding, as well as tractor sales and repair.

The following section describes the investigations conducted at the Moses Lake Maintenance Facility prior to the cleanup action. The CAP, EDR, and CMP are summarized in Sections 2.2 and 2.3

2.1 Previous Environmental Investigations

A series of environmental investigations has been performed to characterize petroleum hydrocarbon contamination at the Site. The following paragraphs summarize the environmental investigations on record for the maintenance facility Site.

A regular gasoline underground storage tank (UST) of unknown capacity was removed in the early 1970s (Groundwater Technology, 1994). Leaks were noted during removal. Remedial action was reported to have occurred, but no written records have been found.

In 1986, petroleum-impacted soils were noted during replacement of a 500-gallon diesel UST with a 1,000-gallon diesel UST (Century West Engineering Corporation, 1992). Remedial action was reported to have occurred, but no written records have been found.

In 1990, the City collected a soil sample from a test pit in the former vicinity of the 500-gallon diesel UST. Total petroleum hydrocarbon (TPH) was present in the soil at concentrations greater than the 200 part per million (ppm) 1990 MTCA Method A Cleanup Level. In September 1990, the City notified Ecology of a petroleum hydrocarbon release at the Site.

In March 1992, the City contracted Century West Engineering Corporation (Century West) to complete a remedial investigation (RI) on the eastern portion of the Site. As part of the investigation, Century West dug eight test pits and installed four groundwater monitoring wells. The RI identified the sources of petroleum hydrocarbon contamination as leaks from the former 500-gallon diesel UST and spills related to fueling and maintenance of vehicles. The study recommended excavation of impacted soils and off-site treatment and/or disposal.

In November 1992, the City contracted Royal Excavation, Inc. (REI) and Sage Earth Sciences, Inc (Sage) to remove the four USTs remaining onsite: a 6,000-gallon regular gasoline UST, an 8,000-gallon unleaded gasoline UST, a 1,000-gallon diesel UST and a 500-gallon used oil UST (Sage, 1993). About 425 cubic yards of gasoline-impacted soils were removed from around the two gasoline tanks. In addition, aged petroleum-, diesel- and oil-impacted soils were found in the diesel tank excavation and oil-impacted soils were found in the waste oil tank excavation. In February 1993, the impacted soils in the vicinity of the waste oil tank were excavated. Soil sampling indicated that impacted soils were removed (City of Moses Lake, 1993).

In 1993 and 1994, the City contracted Groundwater Technology, Inc. (GTI) to complete a Remedial Investigation / Feasibility Study (RI/FS) for areas known to be contaminated but not yet cleaned up. The RI investigated areas associated with former UST storage, diesel and waste oil, and vehicle parking, and a stormwater / groundwater collection system that discharged to a storm drain. GTI drilled eighteen soil borings and installed thirteen groundwater monitoring wells. Analytical results indicated that soil was impacted in two areas and a plume of impacted groundwater existed (Groundwater Technology, 1994).

The RI/FS recommended the installation of a remediation system consisting of soil venting, an air sparging system, and in-situ bioremediation. The system was installed in the summer of 1994. In April 1997, it was determined that contaminants were below action levels and the system was shut down (Ecology, 2002).

In June 1995, during excavation of a sweeper pit, petroleum-contaminated soil and waste oil filters were encountered. The contaminated soils and filters were removed (Ecology, 2002).

In late 2001, the City purchased the property to the west of the maintenance facility and east of Block Street. In February 2002, ten test pits were excavated to support future development of the property (Golder, 2002). Diesel- and heavy oil-impacted soils were encountered in two test pits in the center of the Site. Groundwater was not analyzed, but was observed to be potentially impacted. The City is unaware of any previous environmental investigations associated with the western 2.5-acre portion of the Site

In November 2002, the City entered into an Agreed Order (NO. 02-TCPER-4648) with Ecology to complete an RI/FS The RI investigated and defined the nature and extent of chemical impacts to both the original and newly-purchased portions of the maintenance facility property. The FS screened remediation technologies, evaluated cleanup alternatives, and identified a remedy protective of human health and the environment. To address soil contamination, excavation and off-site disposal of soil from the central portion of the Site were recommended. Removal and off-site disposal of saturated soil from the eastern portion of the Site near monitoring well MW-11 were recommended to address groundwater contamination (Golder, 2003).

In 2004, Ecology approved the RI/FS and set final cleanup levels and points of compliance for the selected cleanup action in the CAP (Ecology, 2004).

2.2 CAP Summary

Ecology prepared the CAP as a required part of the site cleanup process under MTCA, Ch. 70.105 D RCW (Ecology, 2004). Based on the nature and extent of contamination, the CAP identified risks to human health and the environment, consisting of potential exposure of human and ecological receptors to contaminated surface and subsurface soil, and contaminated groundwater. To address these risks, the CAP established the following:

- A site-specific cleanup standard comprising cleanup levels and points of compliance;
- The selected remedial action for the site; and
- Requirements for compliance monitoring and institutional controls.

The cleanup action decision was based upon the results of the 2003 RI/FS and other relevant documents in the administrative record

2.2.1 Cleanup Standards

The CAP established cleanup standards for the contaminants contributing the majority of overall risk (indicators) in both soil and groundwater. A cleanup standard consists of a cleanup level and a point of compliance. The cleanup level is the concentration at which a substance does not threaten human health or the environment. The point of compliance is the location onsite at which the cleanup level must be attained.

Tables 1 and 2 present the indicator compounds and associated cleanup levels in soil and groundwater, respectively. The CAP established the point of compliance for groundwater as the entire site, from the top of the saturated zone to the lowest potentially affected portion of the aquifer, in accordance with WAC 173-340-720(8). The point of compliance for soil is all soil throughout the site, as defined in WAC 173-340-740(6).

2.2.2 Cleanup Action Selection

Based on the contaminated media, the contaminants present, and migration and exposure pathways, the CAP established the following remedial action objectives:

- Prevent or minimize direct contact or ingestion of contaminated soil by humans or ecological receptors;
- Prevent or minimize direct contact or ingestion of contaminated groundwater by humans or ecological receptors;
- Prevent or minimize the potential for migration of contaminants from soil to groundwater; and
- Remove free-phase petroleum product.

To meet these objectives, six cleanup action alternatives were identified and evaluated. The alternatives were assessed based on threshold criteria (protection of human health and the environment, compliance with cleanup standards, compliance with state and federal laws, and provision for compliance monitoring) and other requirements (use of permanent solutions to the maximum extent practicable, a reasonable restoration time frame, and consideration of public concerns). Based upon this evaluation, excavation and off-site disposal was the selected cleanup action for the Moses Lake Maintenance Facility.

2.2.3 Compliance Monitoring

To ensure that the cleanup action fully addresses groundwater contamination, the CAP requires that quarterly groundwater monitoring be performed for a minimum of one year following completion of excavation and off-site disposal of impacted soils. The CAP also established institutional controls to address potential residual contamination in groundwater. Institutional controls at the Site consist of deed restrictions on the property limiting groundwater withdrawal and use. These restrictions may be removed if cleanup levels are consistently met over four consecutive quarters of groundwater monitoring.

2.3 EDR and CMP Summary

The EDR and CMP are required components of the site cleanup and monitoring process under MTCA. The EDR presented the construction plans and specifications for the cleanup action. The CMP described environmental monitoring to ensure that the remedy meets cleanup levels at all points of compliance on both a short-term and a long-term basis.

2.3.1 Engineering Design Report

The EDR addressed the general requirements for the excavation and off-site disposal of soil, and presented specific requirements pertaining to structures, utilities, and pavement; grading; and erosion and sediment control.

The EDR delineated two excavation areas within the eastern and central portions of the site; final excavation extents were determined in the field. Based on historical and RI/FS data, the estimated total volume of petroleum-contaminated soil to be removed from these areas was between 300 and 8,000 cubic yards respectively. Contaminated soil and investigation-derived waste were to be

transported by truck to the Roosevelt Regional Landfill operated by Rabanco in Roosevelt, Washington (excavated soil was ultimately sent to Greater Wenatchee Regional Landfill, as described in Section 3 4). Non-contaminated soil from the excavations was to be stockpiled and used as backfill.

In general, the EDR required the repair or replacement of any structures, utilities, or pavement damaged during construction The existing sweeper pit was to be demolished and replaced, and an existing fence and two monitoring wells were to be removed permanently. For the excavation adjacent to the south wall of the maintenance shop, steel underpinning piles were required to support the building wall.

In general, grading specifications stated that all excavation and stockpile areas were to be restored to their pre-construction elevations. Similarly, application of any surface treatments necessary to match pre-construction conditions was required. An exception was made for the pre-existing City stockpile north of Penn Street, for which final grading specifications were established.

Temporary erosion and sediment control measures were also addressed in the EDR. Standard materials and practices were identified to control stormwater runoff and windblown soil, including covering of stockpiles, placement of silt fences, plugging storm drains inside excavations, and sweeping paved areas Several additional provisions were established to control contaminant release during construction. These included restriction of contaminated equipment to exclusion zones, construction of a geomembrane and soil liner system for the contaminated stockpile, and testing and (where necessary) carbon filtration of groundwater collected from excavations prior to discharge.

2.3.2 Compliance Monitoring Plan

Under WAC 173-340-410, compliance monitoring consists of protection, performance, and confirmational monitoring. The CMP described activities to be conducted at the Site to fulfill each of these requirements, and included a Sampling and Analysis Plan (SAP) defining the scope of work and specific tasks to be completed Also included were a Health and Safety Plan (HASP), identifying contaminants, hazards, and safety and emergency procedures at the Site, and a Quality Assurance Project Plan (QAPP), describing field and laboratory quality control, decontamination, and chain of custody procedures

Protection monitoring confirms that human health and the environment are adequately protected during remediation activities. For this purpose, the CMP identified groundwater sampling at downgradient monitoring wells MW-17 and MW-18 on at least one occasion during excavation. In addition, any groundwater within the excavations was to be sampled for laboratory analysis of indicator parameters and, if necessary, treated with activated carbon prior to discharge to the sanitary sewer

Performance monitoring directs remediation activities and confirms that cleanup standards have been attained According to the CMP, performance monitoring was to consist of field screening and onsite testing of excavated soil, with off-site confirmation of duplicates at an analytical laboratory. Areas of soil with indicator compounds above cleanup levels were to be excavated to a maximum depth of 15 ft Contaminated groundwater would be addressed via removal of saturated soil. When onsite analyses indicated that cleanup levels had been achieved, confirmatory samples were to be collected and submitted to the laboratory. The excavation(s) would not be backfilled until laboratory results confirmed that concentrations of indicator compounds were below cleanup levels.

Confirmational monitoring ensures that the site remedy performs as expected over time For this purpose, the CMP identified groundwater sampling from five monitoring wells (MW-10, MW-11 [or its replacement], MW-15, MW-17, and MW-18) and analysis for indicator compounds on a quarterly basis for a minimum of one year. If sample results indicate that groundwater concentrations exceed cleanup levels, Ecology must be notified, and additional excavation may be required.

The SAP summarized specific procedures and requirements pertaining to the compliance monitoring identified in the CMP. The SAP addressed excavation and soil sampling, monitoring well installation and groundwater sampling, collection of field quality assurance/quality control (QA/QC) samples, and sample handling, shipment, and custody. In general, all work was to be conducted in accordance with Golder's Technical Procedures, a copy of which was to be maintained onsite and made available upon request.

3.0 CLEANUP ACTION

This section describes the remedial action at the site Sections 3 1 to 3 2 describe the activities by area Sections 3 3 to 3.8 describe the activities by type Construction quality assurance and as built record drawings are contained in the Construction Quality Assurance (CQA) Report (Golder 2006) issued as a companion report to this CAR Field notes are provided in Appendix A Soil and groundwater sampling procedures and analytical laboratory reports (including data validation reports) are included as Appendices B and C, respectively Photographic documentation is provided in Appendix D Soil disposal records are presented in Appendix E Appendix F provides documentation for monitoring well installations and abandonments The Construction Quality Assurance (CQA) Report, which provides the project As-built figures are included as Appendix G

Through a formal bidding process the City retained Anderson Environmental Contracting (AEC) of Kelso, Washington as the remediation contractor Golder Associates Inc of Redmond Washington retained as the environmental consultant to provide construction oversight and monitoring, and conduct environmental sampling support Laboratory testing of concrete and soils and field testing of concrete slump and air content and soil density was performed by Western Pacific Engineering of Moses Lake, Washington under contract to Golder

Laboratory analysis of protection monitoring and treated groundwater samples was performed by OnSite Environmental (OnSite) of Redmond, Washington OnSite analyzed the initial three preliminary performance monitoring soil samples Based on a request by AEC for expedited turnaround, subsequent soil samples were analyzed by Wy'East Environmental Sciences of Portland, Oregon Both labs are accredited by the State of Washington

3.1 Excavation Area 1

Excavation Area 1 was located directly south of the maintenance shop building (Figure 3) Petroleum-contaminated soil was excavated and disposed of at Greater Wenatchee Regional Landfill Impacted soil was removed to below cleanup levels to the extent practicable However, some petroleum-contaminated soil remains beneath the maintenance shop building Excavation activities required the temporary removal of existing utilities, installation of underpinning piles, and decommissioning of groundwater wells Figure 4 presents cross-sections of Excavation Area 1 As-built figures are included in the Construction Quality Assurance (CQA) Report

3.1 1 Remediation Activities

Prior to excavation of Area 1 free product was removed from Monitoring well MW-11 using a peristaltic pump A ¼ -inch polyethylene tube connected to the pump was slowly lowered in the well until the free product was encountered The pump was continually run and the tube repeatedly raised and lowered until no product was recovered Any free product that remained within the surrounding soils was removed during excavation activities The excavation was 4 to 7 feet deep with a final areal extent of approximately 2,000 square feet, and generally extended down to the underlying native clayey silt soils The excavation conformed to applicable Occupational Safety and Health Administration (OSHA) and Washington Industrial Safety and Health Act (WISHA) requirements Petroleum-contaminated soil was removed with an excavator and loaded directly into dump truck/trailer combinations for transport to the landfill Thirty-one (31) performance samples were collected from the side slopes and bottom of the excavation; results are presented in Tables 3 and 4 Concentrations were below cleanup levels (see Table 1) in all samples except one sample, EX-1-

[SWMB-1(4)] from beneath the south wall of the maintenance building (north wall of the excavation). A concentration of 3,670 mg/kg of diesel range petroleum hydrocarbons was reported in sample EX-1-SWMB-1(4). This single detection above the cleanup level represents less than 10% of the total Area 1 samples and is less than twice the cleanup level Estimated concentrations of gasoline range petroleum hydrocarbons 319 mg/kg were reported in the sample, which are likely represents the lighter fractions of the diesel range petroleum hydrocarbons. However, Ecology did not require the City to excavate the impacted soil from underneath the building to maintain the integrity of the building's structure. There is minimal potential for exposure to human or ecological receptors associated with this sample and as a precautionary measure; an interceptor drain was installed in this area as described below.

During construction activities, the groundwater that entered the excavation was pumped to storage tanks near Excavation Area 2 (Figure 5). Water from the storage tanks was run through a granulated activated carbon filter prior to discharge to the sanitary sewer. Prior to backfilling, four groundwater samples were collected from the excavation and sent to the lab for analysis (EX-1-GW, EX-1-0926, EX-1-GW-1003, and EX-1-GW-101705). Water treatment and groundwater sampling results are presented in Table 5. Analytical results indicated that concentrations of indicator compounds in the groundwater met the cleanup levels.

An interceptor drain was installed to minimize the potential for the remediated area from being recontaminated by impacted soil beneath the maintenance shop building. An as-built drawing of the interceptor drain system installed in this area is presented in the CQA report (Appendix G). The upstream ends of the drain consisted of perforated stub-outs embedded into the north wall of the excavation where samples had been collected containing levels of contamination above cleanup levels. The perforated stub-outs were surrounded by a layer of drain rock. The stubs connected to a tightline manifold, which drains into the storm drain upstream of the oil-water separator located north of Penn Street. A cleanout port and a water sampling port were installed on the drain line

In addition, estimated concentrations of gasoline range petroleum hydrocarbons 67 mg/kg and 90 mg/kg were reported in samples EX-1-SWMB-3.5(6) and EX-1-SWMB-25(5), respectively. Benzene was not detected in either sample or in adjacent samples in Area 1; therefore the gasoline concentrations do not exceed the MTCA method A cleanup level, which is 100 mg/kg when benzene is not present.

3.1.2 Incidental Activities

A utility locate was performed prior to excavation. Excavation required the temporary removal of a natural gas line to the Parks building. The wash rack was temporarily removed A concrete pad at the southwest corner of the maintenance shop building was removed.

To accommodate excavation immediately adjacent to the maintenance shop building, underpinning piles were installed to support the building's south wall.

Four resource protection wells were decommissioned in Excavation Area 1 One of the wells (MW-11) had been identified and was decommissioned prior to excavation. Three additional soil-vapor extraction wells associated with the air sparging system were identified during excavation and subsequently decommissioned All groundwater wells were decommissioned by Holt Drilling (Washington State Licensed Drilling Contractor) in accordance with WAC 173-160-460

3.1.3 Restoration Activities

The area immediately beneath and adjacent to the footing of the south wall of the maintenance building was backfilled with controlled-density fill (CDF). The CDF also enveloped the tightline portion of the interceptor drain to the extent of the underpinned portion of the footing. The lower portion of the remainder of the excavation was backfilled with quarry spalls, which were covered with geotextile. The remaining upper portion was backfilled with imported sandy fill and City stockpile material. Density testing of the upper portion is addressed in the CQA report (Golder 2006).

The gas line serving the Parks building was reconnected. The wash rack was reconstructed and reconnected to the existing drainline. Because of the permeability of the quarry spalls, a perforated groundwater drain was installed extending from the upstream end of an existing perforated drain at the southwest corner of the building southeast to the toe of the slope immediately west of the wash rack. Excavation Area 1 and the areas affected by installation of drains (i.e. trenching) were re-surfaced with crushed rock. A new groundwater monitoring well (MW-19) was installed approximately 8 feet south of the maintenance shop building's southwest corner (Figure 3).

3.2 Excavation Area 2

Excavation Area 2 was located in the central portion of the maintenance yard (Figure 5). Petroleum-contaminated soil was excavated and disposed of at Greater Wenatchee Regional Landfill. Excavation activities required decommissioning of two groundwater wells (MW-16 and MW-18), removal of utilities, and removal of fences. Figure 6 presents a cross-section of Excavation Area 2. As-built figures are included in the CQA report.

3.2.1 Remediation Activities

The excavation ranged from 4 to 8 feet in depth with a final areal extent of approximately 37,000 square feet and generally extended down to the underlying native clayey silt soils. The excavation conformed to applicable OSHA and WISHA requirements. Non-contaminated overburden soil was excavated and stockpiled for use as backfill on a limited basis. In general, petroleum-contaminated soil was removed with an excavator and loaded directly into dump truck/trailer combinations for transport to the landfill; however, in some cases it was stockpiled on plastic liners to be loaded later. Seventy-nine (79) performance samples were collected from the side slopes and bottom of the excavation as excavation proceeded; results are presented in Tables 3 and 4. Where sample results indicated contamination was present above cleanup levels (See Table 1), additional soil was excavated and the area was re-sampled. Excavation was completed when all sample results indicated that concentrations of indicator compounds in the remaining soil were below cleanup levels.

During construction activities, the groundwater that entered the excavation was pumped into storage tanks. Water from the storage tanks was run through a granulated activated carbon filter prior to final discharge. During the early stage of excavation, water was discharged to the sanitary sewer at a maximum rate of approximately 30 gpm. During the later stage, due to large volumes of water entering the excavation, water was discharged to the wetland north of Penn Street at a maximum rate of approximately 120 gpm, requiring a temporary pipeline crossing to be erected under Penn Street. Prior to backfilling, three groundwater samples were collected from the excavation and sent to the lab for analysis (EX-2-GW-1003, EX-2-250N-20W, and EX-2-40N-150E). Results are presented in

Table 5. The analysis indicated that concentrations of indicator compounds in the groundwater met the cleanup levels.

3.2.2 Incidental Activities

A utility locate was performed prior to excavation. Two groundwater wells were decommissioned in Excavation Area 2. One well (MW-16) was decommissioned prior to excavation. MW-18 and MW-15 were damaged during excavation. MW-18 was decommissioned after the excavation was backfilled. Only the monument was damaged at MW-15; a new monument was installed. MW-16 and MW-18 were decommissioned in accordance with WAC 173-340-460 by Holt Drilling.

During excavation adjacent to the sweeper pit, service to the associated fire hydrant was temporarily disconnected. Also, several perforated drain lines were excavated with the petroleum-contaminated soils. Analytical results for samples collected during excavation indicated that concentrations of indicator compounds in the soil beneath the sweeper pit were below cleanup levels; therefore, removal of the sweeper pit was not required. A telephone line located in Penn Street was damaged during excavation, but was promptly repaired.

The fence running north-south from the vehicle impound area to the south fence was removed prior to excavation. A portion of the vehicle impound fence and north fence were removed during excavation activities.

3.2.3 Restoration Activities

Quarry spalls were used for backfill in the lower portion of the southwest corner of the excavation. The remainder of the lower portion of the excavation was filled with imported sandy fill. The bottom of the excavation was covered with geotextile prior to backfilling, except where quarry spalls were used. In this area, geotextile was placed on top of the quarry spalls prior to further backfilling. The upper portion of the excavation was filled to rough subgrade principally with a combination of layers and areas of imported sandy fill and gravelly fill supplied by the City; a portion was filled with non-contaminated overburden soil. The area was graded to finish subgrade with crushed rock.

Service to the hydrant adjacent to the sweeper pit was restored. Perforated drain lines draining north to Penn Street were re-installed. Perforated drain lines draining west to Block Street were not re-installed. Excavation Area 2 was re-surfaced with crushed rock. The temporary pipe crossing in Penn Street was removed and that portion of the street re-graded. The portions of the vehicle impound fence and the north fence that had been removed were replaced.

3.3 Investigation-Derived Waste

Five drums of RI/FS investigation-derived waste (drill cuttings) were present prior to cleanup. As part of the cleanup action, the drums were emptied, and the contents (soil and water) were mixed with the petroleum-contaminated soils for disposal. The drums were crushed and disposed of with the contaminated soil.

3.4 Soil Disposal

All petroleum-contaminated soil was excavated and transported to Greater Wenatchee Regional Landfill for disposal. Dump truck/trailer combinations were used to convey the soil. A list of the

disposal tickets (produced by the landfill operator) is provided in Appendix E. The landfill accepted approximately 13,500 tons of soil from the Site between September 12, 2005 and January 31, 2006.

3.5 Backfill Materials

The following sources of backfill material were used: overburden soil, City stockpile, quarry spalls, CDF, and imported sand. Minor sources of backfill were drain rock and crushed surfacing.

Overburden soil consisted of brown silty sand with some gravel. Overburden was excavated and stockpiled prior to removal of petroleum-contaminated soils. Five composite samples (SP-1-200N-40E-C, SP-2-0N-40E-C, SP-3-200N-40W-C, SP-4-40N-160E-C, and SP-5-20N-15E-C) were analyzed in the lab to confirm that the overburden soil met cleanup levels. Results are presented in Table 3. Overburden was used as backfill in the Excavation Area 2 only.

City stockpile material was taken from the stockpile north of Penn Street. The material consisted of reddish brown sand and gravel with little silt. City stockpile was used in both Excavation Areas.

Quarry spalls consisted of gray, angular crushed stone ranging in size from 4 to 6 inches. The spalls were supplied by Desert Rock Excavation. Spalls were used in both excavation areas.

Controlled-Density Fill (CDF) consisted of brown pozzolanic fill with pea-size aggregate. The CDF was supplied by AAA Readymix. CDF was used beneath and adjacent to the footing of the maintenance shop building at Excavation Area 1.

Imported sand consisted of light brown medium-to-coarse sand with a trace of silt. The material was supplied by Desert Rock Excavation. The material is mined and processed at their facility on Road 4 NE outside of Moses Lake City limits. The material is a by-product from a screening and crushing process at the quarry. The fines content was examined and found to be marginal by shaking and settling in water. As a first use mined material from a commercial source the material was not tested for contamination. The material was used in both excavation areas.

3.6 Water Treatment and Handling

During construction activities, groundwater entering the excavations was pumped into storage tanks for settlement of particulates at the southwest corner of Excavation Area 2. Water from the storage tanks was run through a granulated activated carbon filter prior to final discharge. The maximum allowable concentration of arsenic in water discharged to the City sanitary sewer was set at 30 µg/L by Ecology. During setup and testing of the treatment system, high levels (of arsenic 76 to 2,000 µg/L) were identified in the discharge. Based on sampling of excavation water and historical site arsenic groundwater concentrations, it was inferred that the source of the arsenic was the carbon used in the filters. The carbon supplier acknowledged that they had previously experienced similar situations. The activated carbon was replaced with acid-washed carbon, which was used for the remainder of the project.

During excavation at Area 1 and the early stage of excavation at Area 2, water was discharged to the sanitary sewer. During the later stage of excavation at Area 2, an alternative discharge location had to be identified due to the volume of water flowing into the excavation and influent limitation set for the sanitary sewer. With approval from Ecology, the discharge point for treated excavation water was subsequently switched to the wetland north of Penn Street, requiring a temporary pipeline crossing to be erected under Penn Street. Water discharged from the carbon filter was sampled on a

weekly basis; samples were sent to the laboratory for analysis of petroleum and arsenic. Bromodichloromethane was also analyzed for in associated with the Area excavation and baker tank on a limited basis. Results of these analyses are presented in Table 5

3.7 Well Decommissioning and Installation

Six wells were decommissioned and one was installed during the remedial action. Drillers' reports are provided in Appendix F A new monument was installed for MW-15, as the original was damaged during excavation.

MW-11 and MW-16 were decommissioned prior to excavation. Three additional wells, associated with the air sparging system, were identified during excavation in Area 1 and were subsequently decommissioned. MW-18 was damaged during excavation in Area 2. It was protected during the remainder of excavation and backfilling, and was ultimately decommissioned. All groundwater wells were decommissioned in accordance with WAC 173-160-460.

A new groundwater monitoring well (MW-19) was installed near the southwest corner of the maintenance shop building in Excavation Area 1 (Figure 3).

3.8 Protection Monitoring

During the cleanup action, protection monitoring was conducted to safeguard human health and the environment. One component of protection monitoring consisted of the sampling and analysis of treated excavation groundwater described in Section 3 5. In addition, two downgradient monitoring wells, MW-17 and MW-18, were sampled on one occasion while excavation in Area 2 was in progress. Samples were analyzed for indicator parameters to ensure that remediation activities had not mobilized contamination, releasing it to the groundwater Analytical results associated with protection monitoring are presented in Table 5. None of the indicator parameters was detected above cleanup levels in protection monitoring samples.

3.9 Performance Monitoring

Performance monitoring was conducted during excavation to direct the cleanup action. Removed soil was evaluated for olfactory and/or visual evidence of contamination (e.g., sheen, staining, odor), and field-screened for volatile organic compounds (VOCs) using a photoionization detector (PID) Performance and confirmatory samples were collected from soil at the side slopes and bottom of each excavation and sent for laboratory analysis When time permitted, samples were field-screened for diesel-range petroleum hydrocarbons using a PetroFlag hydrocarbon analyzer kit. In some cases, duplicate samples were not sent. Three (3) samples from Excavation Area 1 and fourteen (14) samples from Excavation Area 2 were collected and analyzed by PetroFlag; results are presented in Table 4. PetroFlag results did not correlate well with that of the analytical laboratories; therefore, the use of this field screening tool was not used extensively. The poor correlation was likely due to interference of moisture and natural organic materials in the soils.

Six samples from Area 1 were sent to OnSite Environmental Inc. of Redmond, WA. The remaining 27 samples from Area 1 were sent to Wy'East Environmental Sciences, Inc. of Portland, Oregon. Two samples from Excavation Area 2 were sent to OnSite, and the remaining 77 were sent to Wy'East. Samples were analyzed for diesel- and heavy oil-range petroleum hydrocarbons by the NWTPH-Dx method, and for gasoline-range petroleum hydrocarbons by the NWTPH-Gx method. Analytical results for performance and confirmatory samples are presented in Table 3

Where performance monitoring results indicated contamination was present above cleanup levels, additional soil was excavated and the area was re-sampled (see Figure 3 and Figure 5) In general, excavation was completed when all performance and confirmatory sample results indicated that concentrations of indicator compounds in the remaining soil were below cleanup levels However, in Excavation Area 1 (Figure 3), concentrations exceeded cleanup levels in one sample from beneath the south wall of the maintenance building (north wall of the excavation) Ecology did not require the removal of this soil in order to preserve the integrity of the maintenance shop building, however, as a precautionary measure an interceptor drain was installed (Section 3 1 1) to control potential migration of petroleum hydrocarbons from these soils All other samples indicated conformance with cleanup levels

3.10 Deviations from Work Plan

The EDR provided the details of the remedial action, including excavation and off-site disposal of soil, and presented specific requirements pertaining to structures, utilities, and pavement; grading; and erosion and sediment control The CMP described the environmental monitoring necessary fulfill the requirements of the CAP and to complete the remedial action The CMP included a Sampling and Analysis Plan (SAP) defining the scope of work and specific tasks to be completed and a Quality Assurance Project Plan (QAPP), describing field and laboratory quality control, decontamination, and chain of custody procedures The following list identifies the deviations from methods and procedures outlined in those documents

- The CMP and EDR identified the Rabanco Landfill as the receiving and disposal facility for contaminated soils Based on a request by the remediation Contractor, the receiving and disposal facility was changed to Waste Management's Greater Wenatchee Regional Landfill
- The EDR required chemical analysis of any imported fill as outlined in Section 02300 Part 2, Products 2-1 General Fill 3(d) of Appendix B Construction Specifications Chemical analysis was not conducted on the imported fill obtained from Desert Rock Excavation The soil was first use material and was mined at their commercial facility outside of City limits
- The EDR required groundwater pumped from the excavation be passed through a carbon filtered treatment system and limited the discharged rate to the sanitary sewer to a maximum of 30 GPM As larger volumes of groundwater were generated, the discharge was redirected (with Ecology's consent) to the wetland located North of the maintenance facility
- The CMP and EDR indicated that monitoring wells MW-11 and MW-16 would be abandoned prior to excavation of Area 1 and Area 2, respectively Four additional wells were also abandoned while performing the remedial action Three SVE wells were encountered and abandoned during excavation of Area 1 Monitoring well MW-18 was damaged during the excavation of Area 2; the well was subsequently abandoned
- Through confirmatory sampling, it was determined the sweeper pit in Area 2 did not require removal
- Due to a limited volume of impacted soil being left underneath the south wall of the maintenance shop, an interceptor drain was installed to prevent recontamination of the remediated Area 1 Excavation area

- On-Site was identified in project documents as the analytical laboratory to which environmental samples would be submitted for chemical analysis. The remediation Contractor requested that the soil samples be sent to Wy'East due to the need for an expedited turnaround time. As Wy'East is accredited for petroleum and OC analysis in soils, the request was granted (with Ecology's consent). All water samples were submitted to On-Site for chemical analysis.

Deviations related to final construction details are addressed and documented in the CQA report.

4.0 DATA VALIDATION AND USABILITY

Protection and performance monitoring analytical results were validated by Informa LLC, based on the applicable elements of the USEPA Functional Guidelines for Organic Data Review (EPA, 1999), USEPA Contract Laboratory Program, USEPA Functional Guidelines for Organic Data Review (EPA, 2002), USEPA Contract Laboratory Program, applicable reference method requirements as appropriate, and the Compliance Monitoring Plan.

Data generated in the field or by the subcontractor laboratory were reviewed Original data was copied and retained in the project file Working copies were distributed to personnel for validating/verifying analytical data

Validation/verification and data management activities were organized by constituent group (i e VOCs, TPH etc). All hard copy or electronic data deliverables were reviewed against chain-of-custody forms for verification of sample identification and analyses requested Any incorrect data or discrepancies noted in the verification were resolved with project management and/or the data generator Any corrections to the original data were noted on the batch log and corrected data sheets or electronic deliverables were issued if necessary. After the completion of data validation/verification, any qualifiers or other comments noted in the validation/verification process and assigned to the data were entered into the qualifier or comment section of the data tables as appropriate The final data summary report was reviewed by appropriate personnel before inclusion in this report

The analytical data collected in support of the Moses Lake Maintenance Facility cleanup action were validated and deemed acceptable for their intended use The analytical laboratory reports data including validation packages are included in Appendix C.

5.0 CONFIRMATIONAL MONITORING

Confirmational monitoring is performed following completion of a cleanup action to verify its long-term effectiveness. Confirmational monitoring will consist of collection and analysis of groundwater samples on a quarterly basis for a minimum of one year. Four monitoring wells will be sampled: MW-10; the upgradient well MW-15; the downgradient well MW-17; and MW-19, installed near the southwest corner of the maintenance shop building to replace MW-11. MW-18 was also identified in the CMP as a downgradient monitoring location; however, this well was damaged during excavation and ultimately decommissioned. Sampling at MW-17 will provide sufficient data for confirmational monitoring downgradient of the excavation areas (Ecology, 2005).

If confirmational monitoring results indicate that cleanup levels have been exceeded in groundwater, Ecology will be notified, and additional excavation may be required. Following all monitoring events, the City will submit a report to Ecology within 60 days. The report will summarize sampling activity and provide tables of groundwater elevations and analytical results. Laboratory analytical reports will also be included.

6.0 SUMMARY AND CONCLUSIONS

The cleanup action at the Moses Lake Maintenance Facility was performed in substantial compliance with the approved plans and specifications In general, the cleanup levels established in the CAP and the CMP were achieved. Soil contaminated above site-specific cleanup levels was excavated and transported to Greater Wenatchee Regional Landfill for disposal. According to the landfill records, 13,500 tons of soil from the Site were accepted between September 12, 2005 and January 31, 2006

The final areal dimensions of Excavation Area 1 were approximately 25 feet north-to-south by 75 ft east-to-west; its depth ranged from 4 to 7 ft Concentrations of indicator compounds in all but one of 35 confirmatory samples for Area 1 were below site-specific cleanup levels This sample was collected beneath the south wall of the maintenance building (north wall of the Area 1 excavation). To preserve the structural integrity of the building, additional excavation was not performed in this area. An interceptor drain was installed to protect the remediated area from being re-contaminated by impacted soil beneath the maintenance shop building. The excavation was backfilled to its pre-construction elevation using a combination of fill materials. The interceptor drain and impacted areas were subsequently covered by the concrete wash rack. Though two limited areas of impacted soil remain under the south wall of the maintenance shop, the remedial action conducted in Area 1 has met the site remedial action objectives identified in the CAP by:

- Preventing or minimizing direct contact or ingestion of contaminated soil by humans or ecological receptors;
- Preventing or minimizing direct contact or ingestion of contaminated groundwater by humans or ecological receptors;
- Preventing or minimizing the potential for migration contaminants from soil to groundwater; and
- Removing free-phase petroleum product.

The final areal dimensions of Excavation Area 2 were approximately 300 feet north-to-south by 200 ft east-to-west; its depth ranged from 4 to 8 ft Concentrations of indicator compounds in all 79 confirmatory samples were below site-specific cleanup levels The excavation was backfilled to its pre-construction elevation using a combination of fill materials The remedial action conducted in Area 2 has met the site remedial action objectives identified in the CAP by

- Preventing or minimizing direct contact or ingestion of contaminated soil by humans or ecological receptors;
- Preventing or minimizing direct contact or ingestion of contaminated groundwater by humans or ecological receptors; and
- Preventing or minimizing the potential for migration contaminants from soil to groundwater; and

Following construction and initial set up of the water treatment system, analytical results indicated that, following treatment, the groundwater removed from the excavations and discharged to both the sanitary sewer and the wetland met the site-specific discharge limitations with one exception. The discharge limit for arsenic (30 mg/kg) was slightly exceeded (31 mg/kg) for a period of one day. During this period water was being discharged to the sanitary sewer.

Confirmational monitoring, consisting of quarterly groundwater sampling from selected wells for a minimum of one year, will be conducted to verify that cleanup levels will continue to be met.

7.0 REFERENCES

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TABLES

Cleanup Levels for Indicator Compounds in Soil

Analyte	Cleanup Level (mg/kg)	Basis
TPH - Gasoline	30/100 [1]	MTCA Method A
TPH - Diesel	2000	MTCA Method A
TPH - Heavy oil	2000	MTCA Method A

Source: Ecology, 2004.

1. MTCA Method A Soil Cleanup Level for gasoline is 30 mg/kg when benzene i mixtures without benzene

Cleanup Levels for Indicator Compounds in Groundwater

Analyte	Cleanup Level (µg/L)	Basis
TPH - Diesel	500	MTCA Method A
Bromodichloromethane	0.706	MTCA Method B

Source: Ecology, 2004.

Performance and Confirmatory Sampling Results

Lab	Sample ID	Sample Time	Sample Date	Depth	Area	Sample Type [1]	Duplicate	Split	Removed?	Oil (ppm)	Diesel (ppm)	Gasoline (ppm)
Site Cleanup Levels										2000	2000	30/100 [2]
OnSite	EXA-1-2.5	11:55	9/15/2005	2.5	1	W	N	N	N	< 290	960	< 13
OnSite	EXA-2-5	12:05	9/15/2005	5	1	W	N	N	Y	< 290	11000	< 13
OnSite	EXA-3-2	12:15	9/15/2005	2	1	W	N	N	N	< 290	< 31	< 13
OnSite	EX-1-0922-A5	11:15	9/15/2005	5	1	B	N	N	N	< 67	< 33	< 5.6
OnSite	EX-1-0922-B2	12:15	9/22/2005	2	1	W	N	N	N	< 67	< 33	< 5.6
OnSite	EX-1-0922-C7	15:35	9/22/2005	7	1	B	N	N	N	< 67	< 33	< 5.6
Wy'East	EX-1-B(2)*	15:35	9/26/2005	2	1	W	N	Y	N	< 100	< 25	< 0.25 UJ
Wy'East	EX-1-C(7)**	15:25	9/26/2005	7	1	B	N	Y	N	< 100	< 25	< 0.25 UJ
Wy'East	EX-1-D(8)	15:00	9/26/2005	8	1	B	N	N	N	< 100	< 25	< 0.25 UJ
Wy'East	EX-1-E(8)	15:15	9/26/2005	8	1	W	N	N	N	< 100	< 25	< 0.25 UJ
Wy'East	EX-1-0928-G(7)	14:40	9/28/2005	7	1	B	N	N	N	< 100	< 25	< 0.25
Wy'East	EX-1-0928-F(8)	14:30	9/28/2005	8	1	B	N	N	N	< 100	< 25	< 0.25
Wy'East	EX-1-SWMB-40(8)	14:35	9/29/2005	8	1	W	N	N	N	< 100	< 25	< 20 UJ
Wy'East	EX-1-SWMB-45(8)	14:45	9/29/2005	8	1	W	N	N	N	< 100	< 25	< 20 UJ
Wy'East	EX-1-SWMB-50(8)	14:55	9/29/2005	8	1	W	N	N	N	< 100	< 25	< 20 UJ
Wy'East	EX-1-SWMB-55(5)	15:05	9/29/2005	5	1	W	N	N	N	< 100	28 J	< 20 UJ
Wy'East	EX-1-SWMB-60(4)	15:10	9/29/2005	4	1	W	N	N	N	< 100	58 J	< 20 UJ
Wy'East	EX-1-SWMB-65(4)	16:10	9/29/2005	4	1	W	N	N	N	< 100	< 25	< 20 UJ
Wy'East	EX-1-SWMB-70(4)	16:20	9/29/2005	4	1	W	N	N	N	< 100	< 25	< 20 UJ
Wy'East	EX-1-SWMB-1(4) [3]	14:00	9/30/2005	4	1	W	N	N	N	< 100	3670 J	319 J
Wy'East	EX-1-SWMB-5(4)	14:10	9/30/2005	4	1	W	N	N	N	< 100	< 25	< 20 UJ
Wy'East	EX-1-SWMB-10(4)	14:20	9/30/2005	4	1	W	N	N	N	< 100	< 25	< 20 UJ
Wy'East	EX-1-SWMB-15(5)	14:30	9/30/2005	5	1	W	N	N	N	< 100	55 J	< 20 UJ
Wy'East	EX-1-SWMB-20(5)	14:40	9/30/2005	5	1	W	N	N	N	< 100	63 J	< 20 UJ
Wy'East	EX-1-SWMB-25(5)	14:50	9/30/2005	5	1	W	N	N	N	< 100	< 25	90 J
Wy'East	EX-1-SWMB-30(6)	15:00	9/30/2005	6	1	W	N	N	N	< 100	139 J	< 20 UJ
Wy'East	EX-1-SWMB-35(6) [3]	15:10	9/30/2005	6	1	W	N	N	N	< 100	714 J	67 J
Wy'East	EX-1-M-4W	17:30	10/5/2005	4	1	W	N	N	N	< 100	< 25	< 20
Wy'East	EX-1-N-4W	17:40	10/5/2005	4	1	W	N	N	N	< 100	< 25	< 20
Wy'East	EX-1-P-5W	17:50	10/5/2005	5	1	W	N	N	Y	< 100	< 25	< 20
Wy'East	EX-1-Q-6B	18:00	10/6/2005	6	1	B	N	N	N	< 100	< 25	< 20 UJ
Wy'East	EX-1-R-6W	18:10	10/6/2005	6	1	W	N	N	N	< 100	< 25	< 20 UJ
Wy'East	EX-1-S-6B	18:20	10/6/2005	6	1	B	N	N	N	< 100	< 25	< 20 UJ
OnSite	EXB-1-5 [4]	12:50	9/15/2005	5	2	B	N	N	Y	33000	2000	41
OnSite	EXB-7-2.5	13:10	9/15/2005	2.5	2	B	N	N	Y	260	70	< 13
Wy'East	EX-2-0928-C(4)	11:20	9/28/2005	4	2	W	N	N	N	731 J	< 25	< 0.25
Wy'East	EX-2-0928-F(4)	11:40	9/28/2005	4	2	W	N	N	Y	7000 J	< 25	< 0.25
Wy'East	EX-2-0928-H(5)	11:55	9/28/2005	5	2	W	N	N	N	< 100	< 25	< 0.25
Wy'East	EX-2-0928-J(6)	12:05	9/28/2005	6	2	W	N	N	Y	5340 J	< 25	< 0.25
Wy'East	EX-2-0929-K(6)	15:20	9/29/2005	6	2	W	N	N	Y	132 J	< 25	< 20 UJ
Wy'East	EX-2-25N-50E-4	15:30	9/30/2005	4	2	W	N	N	Y	311 J	< 25	< 20 UJ
Wy'East	EX-2-25N-100E-4	15:40	9/30/2005	4	2	W	N	N	Y	1990 J	< 25	395 J
Wy'East	EX-2-50N-125E-4	15:50	9/30/2005	4	2	W	N	N	Y	< 100	< 25	< 20 UJ
Wy'East	EX-2-60N-125E-4	16:00	9/30/2005	4	2	W	N	N	Y	< 100	< 25	< 20 UJ
Wy'East	EX-2-25N-50E-7	15:40	10/3/2005	7	2	B	N	N	N	< 100	< 25	< 20
Wy'East	EX-2-50N-75E-6	15:50	10/3/2005	6	2	B	N	N	N	< 100	< 25	< 20
Wy'East	EX-2-75N-140E-2WALL	14:00	10/4/2005	2	2	W	N	N	N	< 100	< 25	< 20
Wy'East	EX-2-100N-130E-3WAL	14:10	10/4/2005	3	2	W	N	N	N	250 J	< 25	< 20
Wy'East	EX-2-75N-50E-6(B)	14:20	10/4/2005	6	2	B	N	N	N	< 100	< 25	< 20
Wy'East	EX-2-90N-50E-7(B)	14:30	10/4/2005	7	2	B	N	N	N	< 100	< 25	< 20
Wy'East	EX-2-25N-100E-5WALL	14:40	10/4/2005	5	2	W	N	N	Y	223 J	113 J	54 J
Wy'East	EX-2-50N-125E-3WALL	14:50	10/4/2005	3	2	W	N	N	Y	251 J	209 J	234 J
Wy'East	EX-2-50N-10W-7B	14:00	10/5/2005	7	2	B	N	N	N	< 100	< 25	< 20
Wy'East	EX-2-50N-40W-6B	14:10	10/5/2005	6	2	B	N	N	N	< 100	< 25	< 20
Wy'East	EX-2-50N-60W-7B	14:20	10/5/2005	7	2	B	N	N	N	< 100	< 25	< 20
Wy'East	EX-2-120N-50E-6B	15:30	10/5/2005	6	2	B	N	N	N	< 100	< 25	< 20
Wy'East	EX-2-90N-100E-3B	14:50	10/7/2005	3	2	B	N	N	N	< 100	< 25	< 20 UJ
Wy'East	EX-2-140N-150E-3B	16:00	10/6/2005	3	2	B	N	N	N	< 100	< 25	< 20 UJ
Wy'East	EX-2-180N-130E-3B	15:10	10/10/2005	3	2	B	N	N	N	< 100	< 25	< 20
Wy'East	EX-2-125N-150E-2W	15:20	10/10/2005	2	2	W	N	N	N	< 100	< 25	< 20
Wy'East	EX-2-190N-135E-2W	15:30	10/10/2005	2	2	W	N	N	N	< 100	< 25	< 20
Wy'East	EX-2-180N-70E-3W	15:40	10/10/2005	3	2	W	N	N	N	< 100	< 25	< 20
Wy'East	EX-2-140N-100E-4B	15:50	10/10/2005	4	2	B	N	N	N	< 100	< 25	< 20
Wy'East	EX-2-195N-45E-4W	10:30	10/11/2005	4	2	W	N	N	N	366 J	< 25	< 20
Wy'East	EX-2-180N-40E-6B	13:00	10/11/2005	6	2	B	N	N	N	< 100	< 25	< 20
Wy'East	EX-2-150N-40E-6B	11:30	10/12/2005	6	2	B	N	N	N	< 100	< 25	< 20
Wy'East	EX-2-175N-0E-5B	11:40	10/12/2005	5	2	B	N	N	N	< 100	< 25	< 20

Performance and Confirmatory Sampling Results

Lab	Sample ID	Sample Time	Sample Date	Depth	Area	Sample Type [1]	Duplicate	Split	Removed?	Oil (ppm)	Diesel (ppm)	Gasoline (ppm)
Site Cleanup Levels										2000	2000	30/100 [2]
Wy'East	EX-2-125N-0E-6B	11:50	10/12/2005	6	2	B	N	N	N	< 100	< 25	< 20
Wy'East	EX-2-170N-15W-3.5W	12:00	10/12/2005	3.5	2	W	N	N	Y	< 100	< 25	< 20
Wy'East	EX-2-180N-0E-3.5W	12:10	10/12/2005	3.5	2	W	N	N	Y	< 100	< 25	< 20
Wy'East	EX-2-80N-5E-7B	14:30	10/18/2005	7	2	B	N	N	N	< 100	< 25	< 20
Wy'East	EX-2-80N-45W-7B	14:40	10/18/2005	7	2	B	N	N	N	< 100	< 25	< 20
Wy'East	EX-2-120N-40W-5B	14:50	10/18/2005	5	2	B	N	N	N	< 100	< 25	< 20
Wy'East	EX-2-190N-60E-4W	15:00	10/18/2005	4	2	W	N	N	N	< 100	< 25	< 20
Wy'East	EX-2-175N-90E-3W	15:10	10/18/2005	3	2	W	N	N	N	409 J	< 25	< 20
Wy'East	EX-2-150N-45W-4W	9:20	10/24/2005	4	2	W	N	N	Y	7250	< 25	< 20
Wy'East	EX-2-150N-45W-4WD	9:20	10/24/2005	4	2	W	Y	N	Y	6830	< 25	37
Wy'East	EX-2-35N-10W-5W	11:00	10/24/2005	5	2	W	N	N	Y	10000	< 25	< 20
Wy'East	EX-2-35N-10W-5WD	11:00	10/24/2005	5	2	W	Y	N	Y	3040	38	< 20
Wy'East	EX-2-125N-60W-4W	10:00	10/25/2005	4	2	W	N	N	N	263	< 25	< 20
Wy'East	EX-2-35N-40W-4W	11:20	10/25/2005	4	2	W	N	N	N	< 100	< 25	< 20
Wy'East	EX-2-35N-40W-6W	11:50	10/25/2005	6	2	W	N	N	N	< 100	< 25	< 20
Wy'East	EX-2-90N-60W-5W	12:00	10/25/2005	5	2	W	N	N	N	< 100	< 25	< 20
Wy'East	EX-2-55N-60W-5W	12:10	10/25/2005	5	2	W	N	N	N	218	27	< 20
Wy'East	EX-2-55N-60W-6W	12:20	10/25/2005	6	2	W	N	N	N	< 100	< 25	< 20
Wy'East	EX-2-10N-30E-4W	15:30	11/9/2005	4	2	W	N	N	N	440 J	28 J	< 20
Wy'East	SP-1-200N-40E-C	14:20	11/16/2005	-	2	S	N	N	N	172 J	26 J	< 20
Wy'East	SP-2-0N-40E-C	14:30	11/16/2005	-	2	S	N	N	N	452 J	42 J	< 20
Wy'East	EX-2-270N-2E-5W	14:10	11/18/2005	5	2	W	N	N	N	113	131	26 J
Wy'East	EX-2-290N-10W-4W	14:20	11/18/2005	4	2	W	N	N	Y	4930	1340	< 20 UJ
Wy'East	EX-2-240N-15E-5W	13:00	11/17/2005	5	2	W	N	N	N	280	< 25	< 20 UJ
Wy'East	EX-2-220N-0E-6B	10:50	11/18/2005	6	2	B	N	N	N	< 100	< 25	< 20 UJ
Wy'East	EX-2-220N-0E-6BD	10:50	11/18/2005	6	2	B	Y	N	N	< 100	< 25	< 20 UJ
Wy'East	EX-2-40N-150E-4W	12:40	11/22/2005	4	2	W	N	N	N	108	< 25	< 20 UJ
Wy'East	EX-2-55N-150E-4W	15:00	11/22/2005	4	2	W	N	N	Y	2540	< 25	< 20 UJ
Wy'East	EX-2-10N-115E-4W	16:30	11/21/2005	4	2	W	N	N	N	760	< 25	< 20 UJ
Wy'East	EX-2-10N-115E-4WD	16:30	11/21/2005	4	2	W	Y	N	N	210	< 25	< 20 UJ
Wy'East	EX-2-285N-50W-3.5W	16:45	11/22/2005	3.5	2	W	N	N	N	< 100	< 25	< 20 UJ
Wy'East	EX-2-240N-25W-4W	12:00	11/23/2005	4	2	W	N	N	N	< 100	< 25	< 20 UJ
Wy'East	EX-2-230N-10W-5B	12:00	11/23/2005	5	2	B	N	N	N	< 100	< 25	< 20 UJ
Wy'East	EX-2-230N-10W-5BD	12:10	11/23/2005	5	2	B	Y	N	N	< 100	< 25	< 20 UJ
Wy'East	EX-2-180N-40W-5W	14:40	11/30/2005	5	2	W	N	N	N	< 100	< 25	< 20 UJ
Wy'East	EX-2-170N-30W-5B	14:50	11/30/2005	5	2	B	N	N	N	< 100	< 25	< 20 UJ
Wy'East	EX-2-20N-20W-5W	11:20	12/2/2005	5	2	W	N	N	N	< 100	< 25	< 20 UJ
Wy'East	EX-2-55N-160E-4W	16:00	12/1/2005	4	2	W	N	N	N	< 100	< 25	< 20 UJ
Wy'East	EX-2-20N-20W-5WD	11:20	12/2/2005	5	2	W	Y	N	N	< 100	< 25	< 20 UJ
Wy'East	SP-3-200N-40W-C	12:20	12/2/2005	-	2	S	N	N	N	< 100	< 25	< 20 UJ
Wy'East	SP-4-40N-160E-C	12:30	12/2/2005	-	2	S	N	N	N	< 100	< 25	< 20 UJ
Wy'East	EX-2-20N-10E-5W	12:30	12/6/2005	5	2	W	N	N	N	< 100	< 25	< 20
Wy'East	EX-2-30N-25W-4W	11:40	12/6/2005	4	2	W	N	N	N	391	117	< 20
Wy'East	EX-2-20N-10E-5WD	12:30	12/6/2005	5	2	W	Y	N	N	< 100	< 25	< 20
Wy'East	SP-5-20N-15E-C	14:40	12/6/2005	-	2	S	N	N	N	< 100	< 25	< 20
Wy'East	EX-2-300N-15W-3W		12/12/2005	3	2	W	N	N	N	200 J	< 25	< 20 UJ
Wy'East	EX-2-335N-25W-3W		12/13/2005	3	2	W	N	N	N	361 J	< 25	< 20 UJ
Wy'East	EX-2-295N-30W-3W		12/19/2005	3	2	W	N	N	N	< 100	< 25	< 20 UJ
Wy'East	EX-2-295N-30W-3WD		12/19/2005	3	2	W	Y	N	N	129	< 25	< 20 UJ
Wy'East	EX-2-290N-20W-4B		12/19/2005	4	2	B	N	N	N	< 100	< 25	< 20 UJ

Notes:

< = Not detected at reporting limit shown

Shading indicates concentration exceeds cleanup level

1 Sample Type: B = Bottom of excavation; S = Stockpiled overburden (composite samples); W = Sidewall of excavation

2 MTCA Method A Soil Cleanup Level for gasoline is 30 mg/kg when benzene is present and 100 mg/kg for mixtures without benzene

3 Gasoline result for this sample represents gas-range portion of diesel (not gasoline).

4 Gasoline result for this sample impacted by diesel

*. Split sample of EX-1-0922-B2

** Split sample of EX-1-0922-C7

TABLE 4

PetroFlag Analysis Results

Date	Sample#	Excavation Area	Setting	Temp (°C)	Reading (ppm)	Calib	Corresponding Lab Sample	Laboratory Result for Diesel (ppm)
9/14/2005	EXA-1-2.5	1	SC-7	23.3	797	Y	EXA-1-2.5	960
9/14/2005	EXA-2-5	1	SC-7	23.3	>2000	Y	EXA-2-5	11000
9/14/2005	EXA-3-2	1	SC-7	23.3	45	Y	EXA-3-2	< 31
9/14/2005	EXB-1-5	2	SC-7	23.3	>2000	Y	EXB-1-5	2000
9/15/2005	EXB-7-2.5	2	SC-7	23.3	687	Y	EXB-7-2.5	70
11/9/2005	1	2	RC-5	25.2	386	Y	EX-2-10N-30E-4W	28
11/9/2005	2	2	RC-5	25.2	>4000	Y	N/A	N/A
11/16/2005	1	2	RC-5	23.6	1121	N	N/A	N/A
11/17/2005	1-40	2	RC-5	24.2	1367	Y	EX-2-240N-15E-5W	< 25
11/17/2005	2-70	2	RC-5	24.2	2522	Y	EX-2-270N-2E-5W	131
11/17/2005	3-85	2	RC-5	24.2	1086	Y	EX-2-290N-10W-4W	1340
11/22/2005	40	2	RC-5	22.5	1643	Y	EX-2-40N-150E-4W	< 25
11/22/2005	55	2	RC-5	22.5	1767	Y	EX-2-55N-150E-4W	< 25
11/22/2005	285	2	RC-5	22.5	342	Y	EX-2-285N-50W-3.5W	< 25
11/22/2005	290	2	RC-5	22.5	852	Y	N/A	N/A
12/13/2005	1	2	RC-5	17.1	660	Y	EX-2-300N-15W-3W	< 25
12/13/2005	2	2	RC-5	17.1	471	Y	EX-2-335N-25W-3W	< 25

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TABLE 5

Water Treatment and Groundwater Sampling Results

Sample Information			Hydrocarbons (µg/L)							Total Metals (µg/L)								NWTPH-$G_{(BTEX)}$/*VOC (8260B) (µg/L)				
Sample Name	Date Collected	Description	NWTPH-HCID Gasoline	NWTPH-HCID Diesel	NWTPH-HCID Lube Oil	NWTPH-G Gasoline	NWTPH-Dx Diesel	NWTPH-Dx Lube Oil	Oil & Grease (Hexane Extractable)	As	Cd	Cr	Cu	Pb	Zn	Hg	Ag	B	T	E	X	Bromodichloromethane
Site Cleanup Levels							500			30[a]												0.7
Water Treatment Sampling Results																						
BT-1-600	09/21/05	Treated water from Baker Tank #1, after 600 gal passed thru carbon filter #1	---	---	---	< 100	< 250	< 410	---	2000	---	---	---	---	---	---	---	---	---	---	---
BT-1 PCF	09/21/05	Untreated water from Baker Tank #1, collected prior to carbon filter #1	---	---	---	< 100	5600	1600	---	---	---	---	---	---	---	---	---	---	---	---	---
BT-1-2-600	09/22/05	Treated water from Baker Tank #1, after 600 gal passed thru carbon filter #2	---	---	---	< 100	270	< 410	< 5000	76	< 4.4	< 11	17	---	430	< 0.50	< 11	< 0.2*	< 0.2*	< 0.2*	0.49*	0.2*
EX-1-GW	09/23/05	Untreated groundwater from Excavation Pit #1, collected with pump OFF, prior to Baker Tank & carbon filter #2	---	---	---	---	---	---	---	11	---	---	---	---	---	---	---	---	---	---	---	---
BT-1-OUT	09/23/05	Untreated water from Baker Tank #1, collected prior to carbon filter #2	---	---	---	---	---	---	---	36	---	---	---	---	---	---	---	---	---	---	---	---
CF-2-OUT	09/23/05	Treated water from Baker Tank #1, collected after 2000 gal passed thru carbon filter #2	---	---	---	---	---	---	---	20	---	---	---	---	---	---	---	---	---	---	---	---
BT-1-3000	09/26/05	Treated water from Baker Tank #1, after 3000 gal passed thru carbon filter #2	---	---	---	---	---	---	---	20	---	---	---	---	---	---	---	---	---	---	---	---
EX-1-0926	09/26/05	Untreated groundwater from EX-1, collected with pump ON, prior to Baker Tank & carbon filter #2	---	---	---	---	---	---	---	24	---	---	---	---	---	---	---	---	---	---	---	---
SPHW-1	09/27/05	Sweeper pit hydrant water (used to rinse BT #2, and charge carbon filter #2)	---	---	---	---	---	---	---	< 3.3	< 4.4	< 11	< 11	< 1.1	< 28	---	---	---	---	---	---	---
BT-2-RS0927	09/27/05	Rinse sample from Baker Tank #2, prior to filling with site g.w.	---	---	---	---	---	---	---	< 3.3	< 4.4	< 11	< 11	< 1.1	< 28	---	---	---	---	---	---	---
EX-1-GW-1003	10/03/05	Untreated groundwater from EX-1, collected with pump OFF, prior to Baker Tank & carbon filter #2	---	---	---	< 100	< 260	< 420	---	7.1	---	---	---	---	---	---	---	---	< 1.0	<1.0	<1.0	<1.0	---
EX-2-GW-1003	10/03/05	Untreated groundwater from EX-2, collected with pump ON, prior to Baker Tank & carbon filter #2	---	---	---	110	< 260	580	---	28	---	---	---	---	---	---	---	---	< 1.0	1.8	<1.0	<1.0	---
CF-2-1003	10/03/05	Treated water discharged from carbon filter #2	---	---	---	< 100	< 260	< 420	---	13	---	---	---	---	---	---	---	---	< 1.0	<1.0	<1.0	<1.0	---

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Water Treatment and Groundwater Sampling Results

Sample Information			Hydrocarbons (µg/L)							Total Metals (µg/L)								NWTPH-$G_{(BTEX)}$/*VOC (8260B) (µg/L)				
Sample Name	Date Collected	Description	NWTPH-HCID Gasoline	NWTPH-HCID Diesel	NWTPH-HCID Lube Oil	NWTPH-G Gasoline	NWTPH-Dx Diesel	NWTPH-Dx Lube Oil	Oil & Grease (Hexane Extractable)	As	Cd	Cr	Cu	Pb	Zn	Hg	Ag	B	T	E	X	Bromodichloro-methane
Site Cleanup Levels							500			30[a]												
Water Treatment Sampling Results																						0.7
BT-3-RS1003	10/03/05	Baker Tank #3, rinsate sample from tank prior to filling with excavation groundwater	---	---	---	---	---	---	---	< 3.3	---	---	---	---	---	---	---	---	---	---	---	---
CF-2-1012	10/12/05	Treated water discharged from carbon filter #2	---	---	---	< 100	< 260	< 420	---	31	---	---	---	---	---	---	---	< 1.0	<1.0	<1.0	<1.0	---
EX-1-GW-101705	10/17/05	Untreated groundwater collected directly from EX-1	< 100	< 250	< 400	---	---	---	---	---	---	---	---	---	---	---	---	< 0.2*	< 0.2*	< 0.2*	< 0.4*	< 0.2*
CF-3-101705	10/17/05	Treated water discharged from carbon filter #3	---	---	---	< 100	< 250	< 400	---	20	---	---	---	---	---	---	---	< 1.0	<1.0	<1.0	<1.0	---
CF-2-1-1101	11/01/05	Teated water discharged from carbon filter	---	---	---	< 100	< 270	< 430	---	16	---	---	---	---	---	---	---	< 1.0	<1.0	<1.0	<1.0	---
CF-N-1118	11/18/05	Teated water discharged from carbon filter	---	---	---	< 100	320	1200	---	7.4	---	---	---	---	---	---	---	< 1.0	<1.0	<1.0	<1.0	---
CF-S-1118	11/18/05	Teated water discharged from carbon filter	---	---	---	< 100	480	1500	---	7.6	---	---	---	---	---	---	---	< 1.0	<1.0	<1.0	<1.0	---
EX-2-250N-20W	12/02/05	Untreated water from NW lobe of Area 2	---	---	---	< 100	< 260	< 410	---	9.6	---	---	---	---	---	---	---	< 1.0	<1.0	<1.0	<1.0	---
EX-2-40N-150E	12/02/05	Untreated water from SE lobe of Area 2	---	---	---	< 100	< 250	< 410	---	19	---	---	---	---	---	---	---	< 1.0	<1.0	<1.0	<1.0	---
CF-E-1206	12/06/05	Teated water discharged from carbon filter	---	---	---	< 100	< 260	< 420	---	14	---	---	---	---	---	---	---	< 1.0	<1.0	<1.0	<1.0	---
CF-W-1206	12/06/05	Teated water discharged from carbon filter	---	---	---	< 100	< 270	550	---	7.6	---	---	---	---	---	---	---	< 1.0	<1.0	<1.0	<1.0	---
SSWS0127	01/27/06	Water sample collected from bermed and lined soil stockpile area	---	---	---	---	< 250	1000	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Groundwater Sampling Results																						
MW-17	10/17/05	Groundwater sample for protection monitoring	---	---	---	< 100	< 260	< 410	---	---	---	---	---	---	---	---	---	< 0.2*	< 0.2*	< 0.2*	< 0.4*	< 0.2*
MW-18	10/17/05	Groundwater sample for protection monitoring	---	---	---	< 100	< 250	< 410	---	---	---	---	---	---	---	---	---	< 0.2*	< 0.2*	< 0.2*	< 0.4*	< 0.2*

Notes:

--- Not Analyzed

* - VOC analysis by 8260B

[a] - Maximum Arsenic allowance by WDOE for discharge of treated water into City Sanitary Sewer

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FIGURES

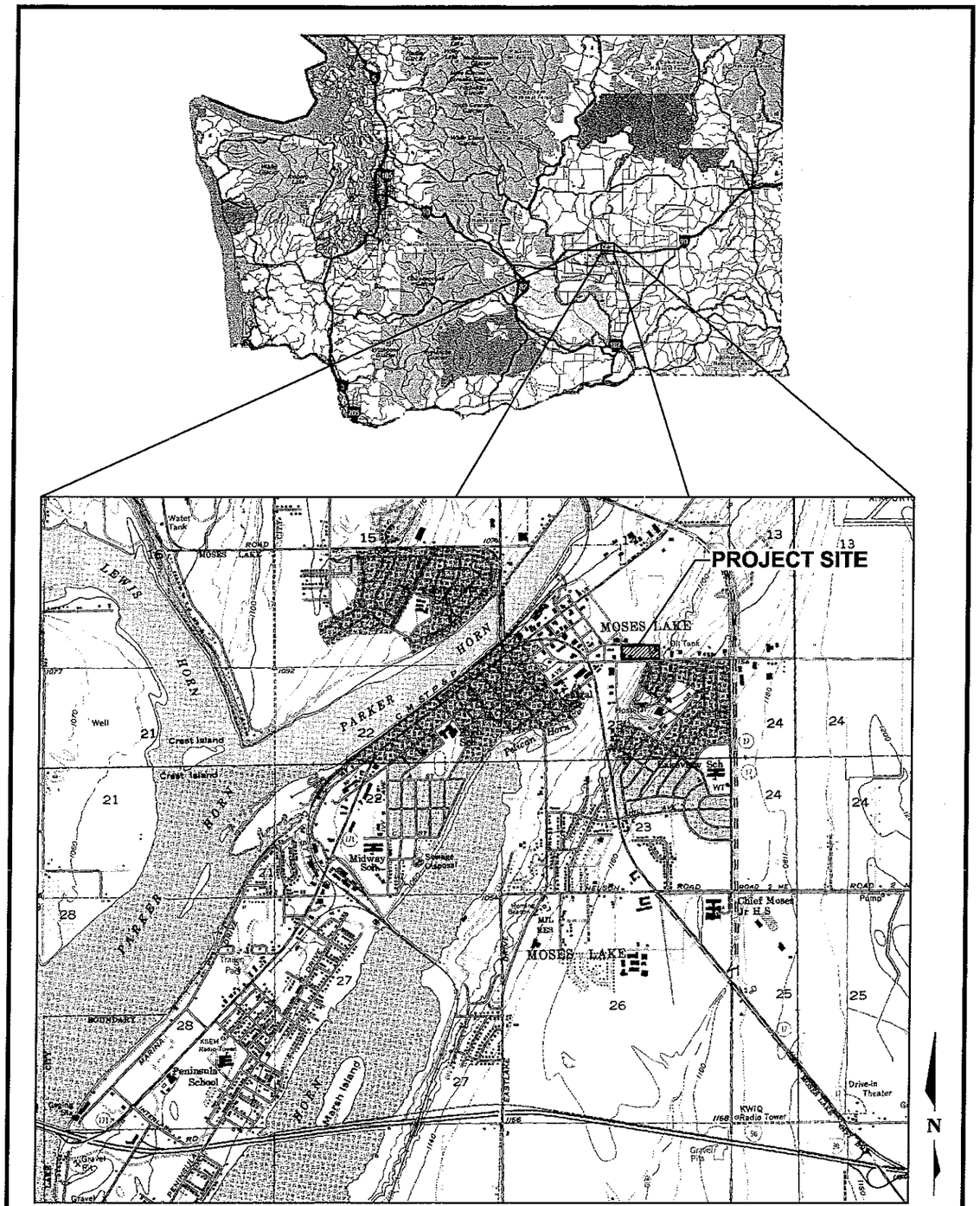

FIGURE **1**

VICINITY MAP

MOSES LAKE/MAINTENANCE FACILITY RA

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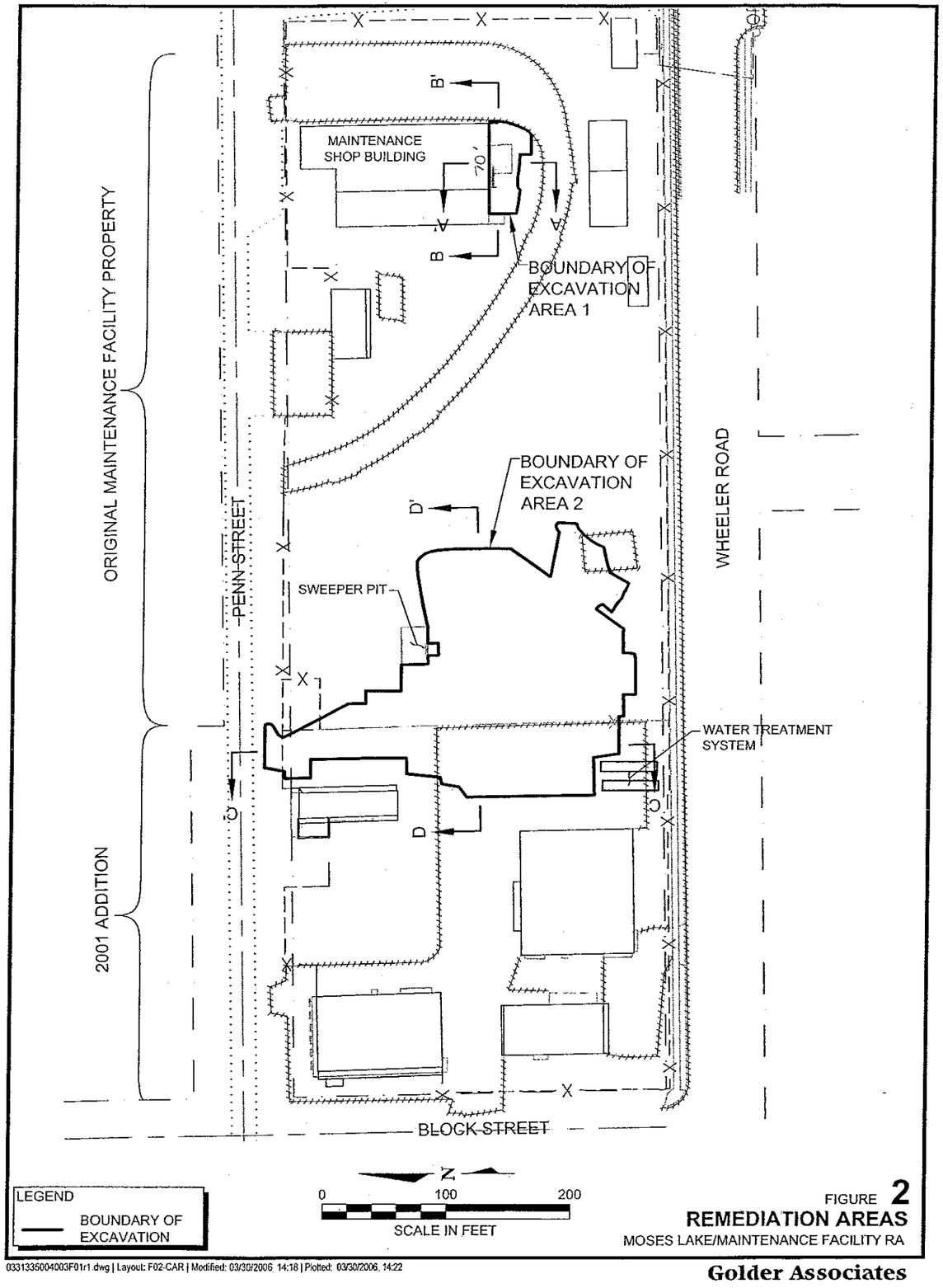


FIGURE **2**

REMEDIATION AREAS

MOSES LAKE/MAINTENANCE FACILITY RA

0331335004003F01r1.dwg | Layout: F02-CAR | Modified: 03/30/2006 14:18 | Plotted: 03/30/2006 14:22

Golder Associates

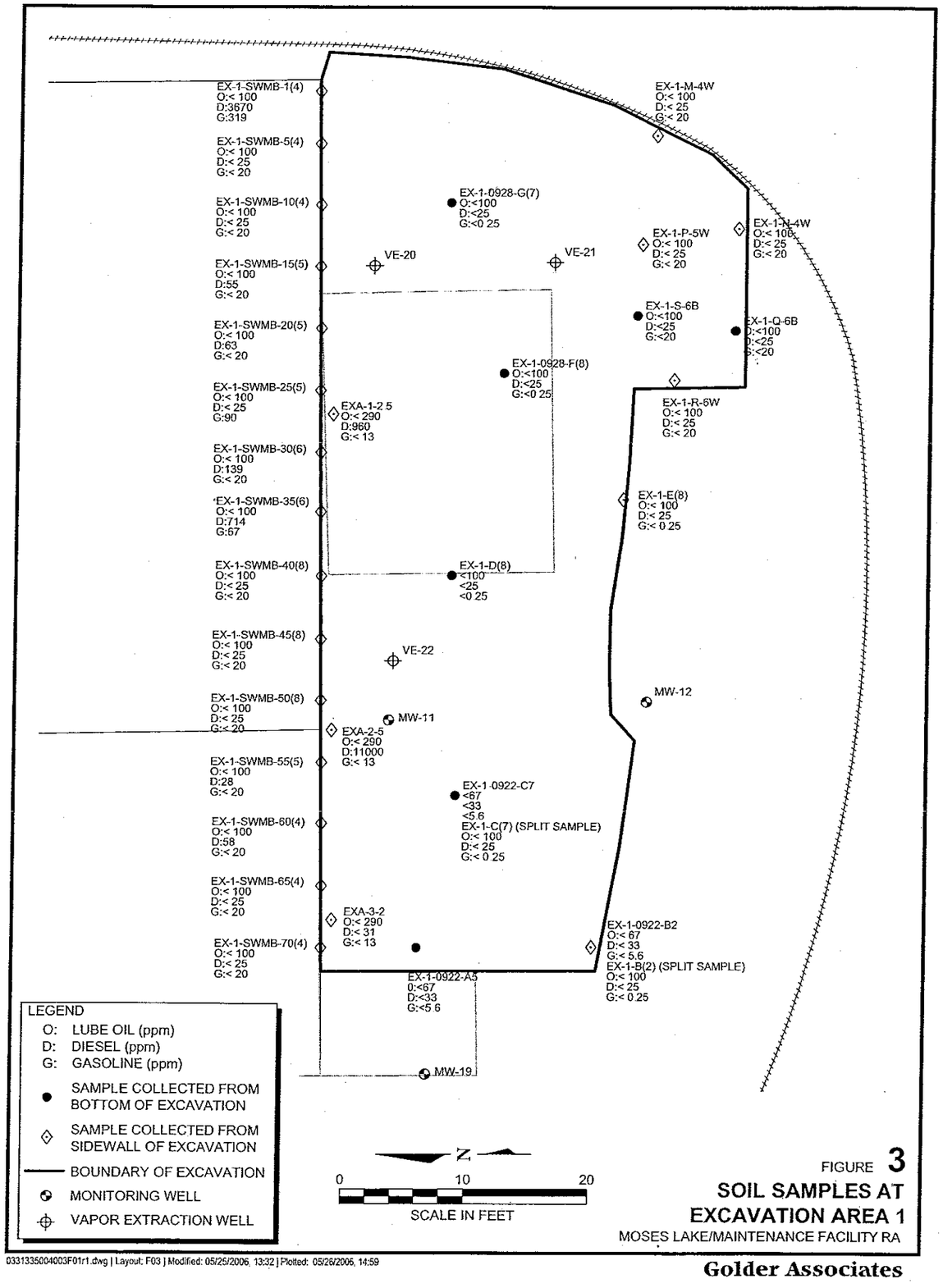


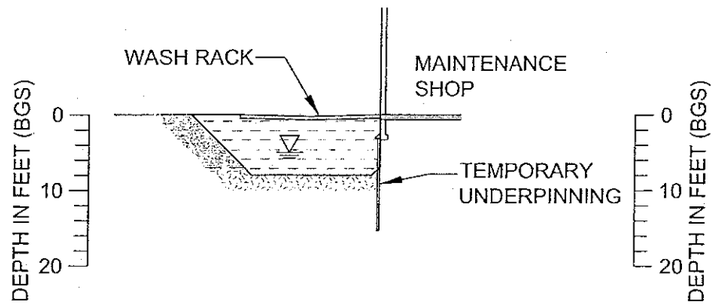
FIGURE **3**

SOIL SAMPLES AT EXCAVATION AREA 1

MOSES LAKE/MAINTENANCE FACILITY RA

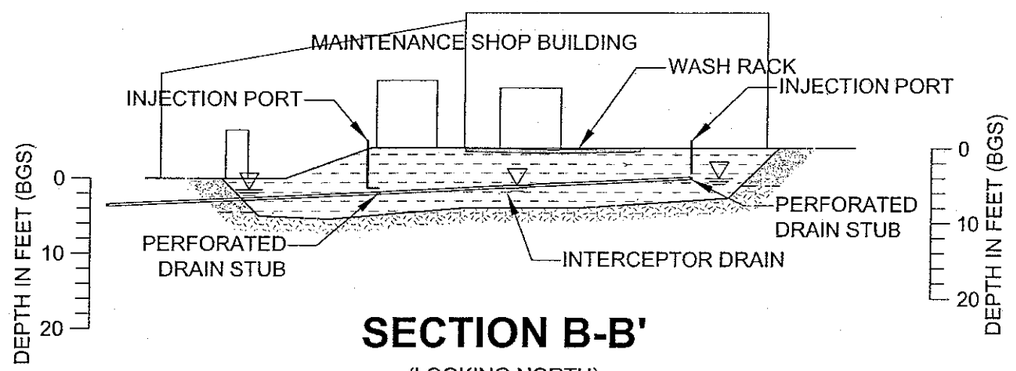
033133504003F01r1.dwg | Layout: F03 | Modified: 05/25/2006, 13:32 | Plotted: 05/26/2006, 14:59

Golder Associates



SECTION A-A'

(LOOKING WEST)



SECTION B-B'

(LOOKING NORTH)

LEGEND

- Excavation Backfill
- Compact, brown to yellowish brown, fine SAND and SILT
- Loose to compact, dark gray to dark grayish brown, fine to coarse SAND, little to some gravel, trace to little silt

0 20 40

SCALE IN FEET

FIGURE **4**

CROSS SECTIONS, EXCAVATION AREA 1

MOSES LAKE/MAINTENANCE FACILITY RA

0331335004003F01r1.dwg | Layout: F04 | Modified: 03/30/2006 14:18 | Plotted: 03/30/2006, 14:22

Golder Associates

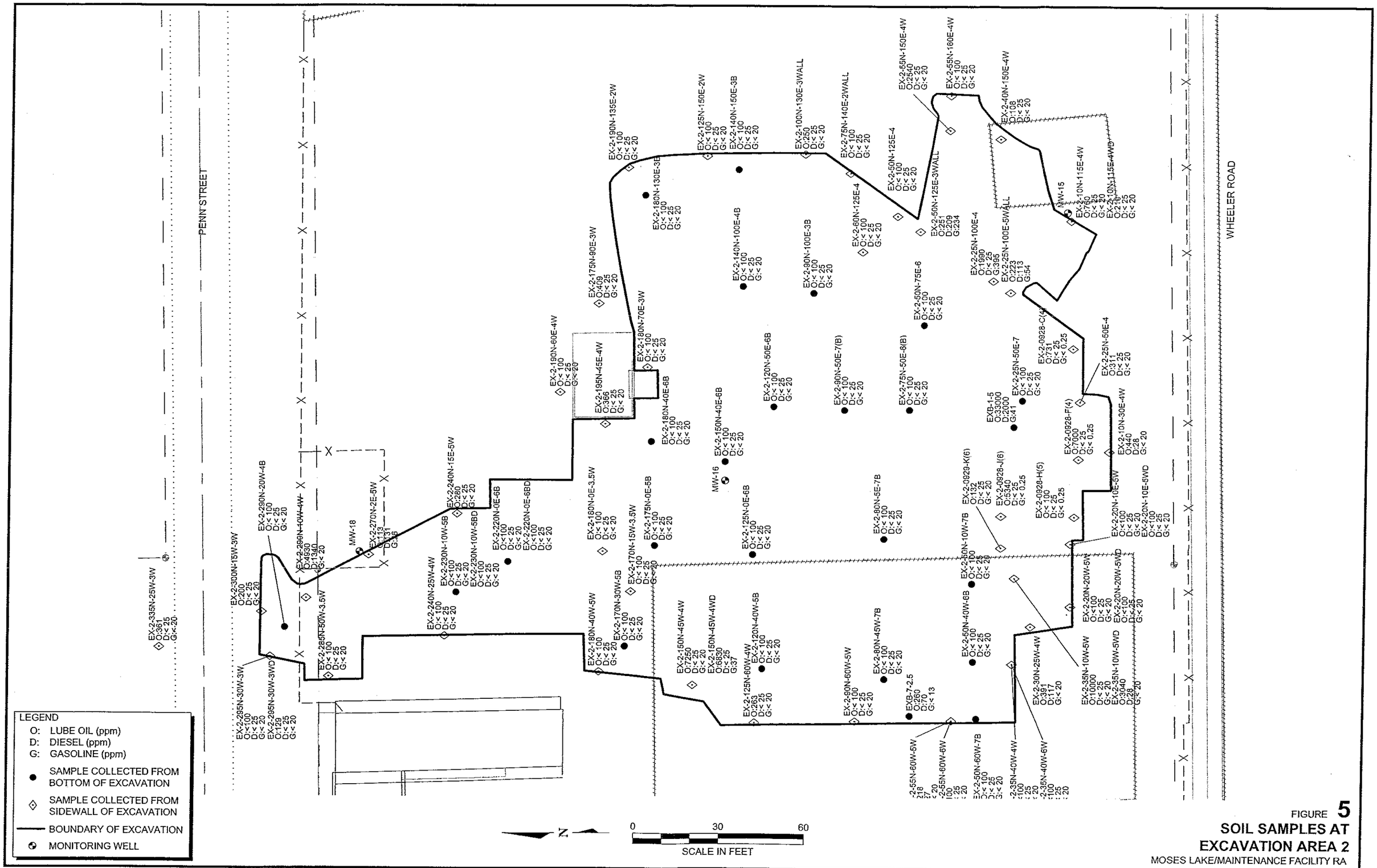


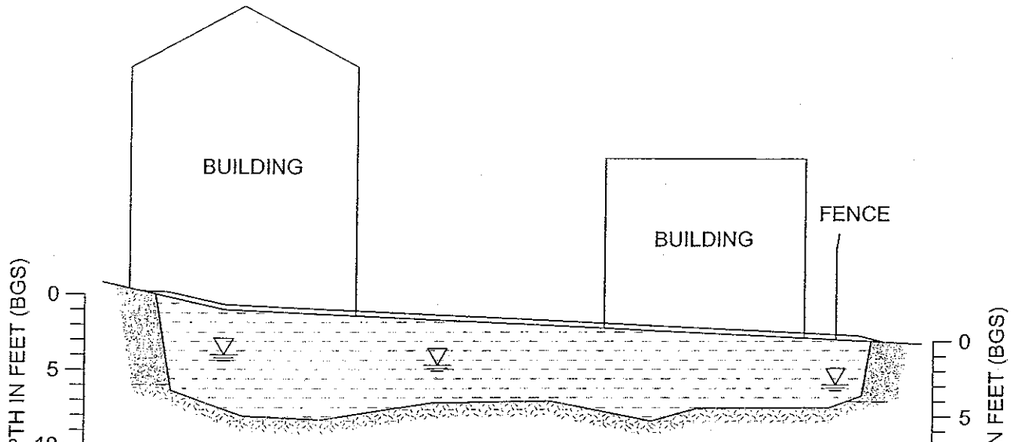
FIGURE **5**

SOIL SAMPLES AT EXCAVATION AREA 2

MOSES LAKE/MAINTENANCE FACILITY RA

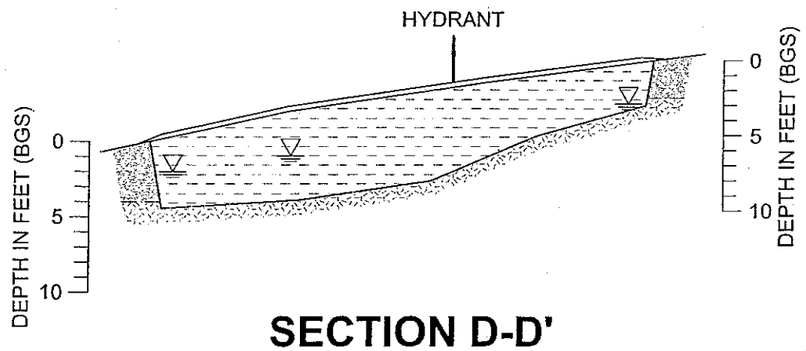
0331335004003F01r1.dwg | Layout: F05 | Modified: 03/30/2006 14:54 | Plotted: 03/30/2006 14:55

Golder Associates



SECTION C-C'

(LOOKING WEST)



SECTION D-D'

(LOOKING NORTH)

LEGEND

- Excavation Backfill
- Loose to compact, light brown, silty fine SAND and fine sandy SILT
- Loose to dense, gray to dark gray, fine to coarse SAND, trace to some gravel, trace to little silt

0 60 120

SCALE IN FEET
6X VERTICAL EXAGGERATION

FIGURE **6**

CROSS SECTIONS, EXCAVATION AREA 2

MOSES LAKE/MAINTENANCE FACILITY RA

0331335004003F01r1.dwg] Layout: F06] Modified: 03/30/2006 14:18] Plotted: 03/30/2006 14:22

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APPENDIX A

FIELD DOCUMENTATION

City of Moses Lake – Maintenance Facility CAP – Field Notebook

Volume I – 9/12/05 – 9/27/05

Todd Morris (425) 556-5554 x. 2015

Garret Hale cell: (360) 957-1488
office: (360) 577-9194

AEC – Excavator = CAT 320C, track mount
Dozer = CAT 938G, tire mount

COPY

033-1335-004

9/12/05

10:00 Kick-off meeting at site

City of Moses Lake:
Gary McFaul
Tim Varney

Anderson Environmental
Kelly Kellogg
Garrett Hale

WA DOE
Sandra Treccani

Golder
Steve VanSlyke
Paul VanMiddlesworth
Ted Norton

14:30 MW-11

w.l. = 5.5' bgs

~2" free Product on top of wt.

pump ~ 1 gal prod/water

-thick, black oil product (Heavy), heavy sheen, strong hydrocarb. odor

15:00 after 30 min, ~ 1" free prod. entering well

pump another gallon prod/water.

16:15 Pump gallon #3 from MW-11 = heavy oil + water

15:40 MW-16

w.l. = 2.5' bgs.

No free prod. in well, no odor, no sheen.

Dx & Petra Fitzgerald

9/13/05 Sunny, warm (80°), clear

0800 PVM on site.

Discuss design of Export Stockpile area for Test Pit material.

0900 Confirm w/ Mark Ader (WDOE-Spo.) that Certified Driller must Abandon & Decommission MW-11 & -16 since well bottom is below anticipated depth of excavation.

1000 Pump 1-gal of free prod./water from MW-11.

Calibrate field meters:

PID - calibrated to 99.7 using 100.0 ppm std.

Golder # SEA0256 - PE PhotoVac 2020

Serial # ED HE 332

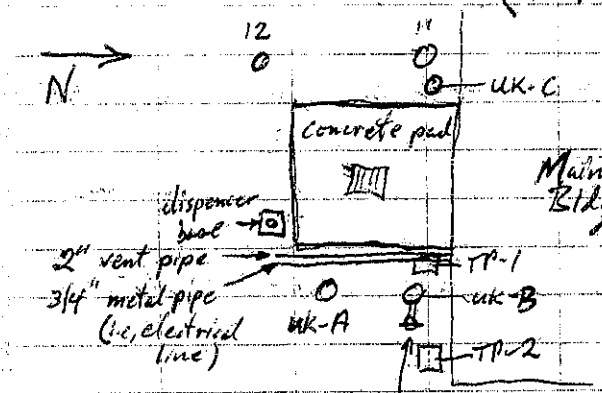
Calib. Gas = Byrne Specialty Gases 100 ppm IsoButylene

Lot # LTM214CM

Exp. Dec. 2007

1100 Begin digging Test Pit @ Area 1.

Encounter 2 monitor wells on East side of wash rack. (4" PVC) - No free petro. product in 2 unknown wells.



horiz. PVC attached to top of MW

Top of unknown MW's @ 8" bgs, under gravel.

TP-1 Petro. impacted dirt encountered @ 2' bgs -2.5'
- loose gravelly sand
- heavy sheen, strong petro. odor
PID = 580 ppm

TP-2 Sandy gravel, loose

Petro-impacted soil encountered @ 2.5' bgs
- heavy sheen, strong petro. odor
PID = 191 ppm

- 6" Non-friable Asbestos/Concrete ~~west UK-B~~ pipe encountered @ 2' bgs., does not appear to be connected to anything, just backfilled at location of Removed UST

well UK-A = no petro. prod. on water
= w.l. = 2.25' bgs
= 4" PVC
(Bottom = 5.5' bgs)

well UK-B = w.l. = 2.5' bgs
= no free petro. prod. on water
(horiz. PVC pipe oriented E-W connect to east side of TOC)
= 4" PVC
(TD = 6.5' bgs)

033-1335-004

well UK-C = w.l. = 4.5' bgs
= Free Prod. on water
(horiz PVC pipe oriented
N-S connect to S-side of TOC
= 4" PVC
(TD = 6.5' bgs)

Sandra (WDOE) calls to inform
that ~~@~~:
- if know construction of UK wells,
then just bent. backfill + cut-off.

- If Don't know construct.,
the must perf. well, backfill, +
overdrill.

Irrigators, Inc. & bentonite

Holt Drilling & arrives to Abandon wells

MW-16 = TD = 14' - fill w/ bentonite chips, hydrate
WDOE #: AHJ373

MW-11 = TD = 13.7' - fill w/ bentonite chips, hydrate

~~####~~ UK-A = TD = 5.5'
fill w/ bentonite chips, hydrate

UK-B = TD = 6.5'
fill w/ bentonite chips, hydrate

UK-C = TD = 6.5'
Purge 2.5 gal oil/water,
fill w/ bentonite,
hydrate

033-1335-004

12

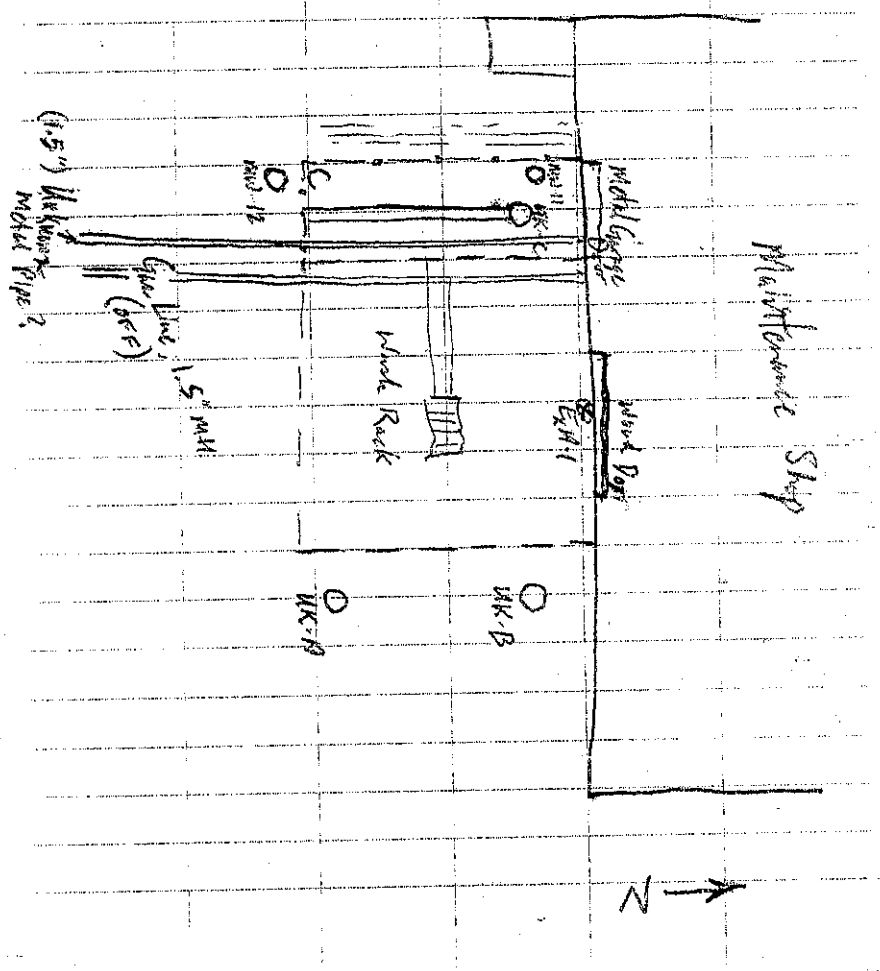
13

9/14/85

Sunny (80°F) hot, no breeze.

Excavation

Begin excavating in Area #1 (EA-1)



033-1335-004

11:30 Collect Sample Ex A-1
@ beneath footwall @ Wood Door
EXA-1-2.5 @ 2.0-2.5' bgs (Photo)
- Dark Gray silty sand, wet,
strong petro. odor, med. sheen
PID = 543 ppm / 420

11:40 Sample Ex A-2 @ 4.5-5' bgs
beneath footwall @ Metal Door
EXA-2-5 - coarse gravel, saturated,
angular, sorted,
v. strong petro odor, heavy sheen
PID = 1093 ppm / 453

12:00 Sample Ex A-3 @ 1.5-2' bgs
@ footwall @ 5' w. of Metal Door
EXA-3-2 - silty sand, wet,

PID = 75.9 ppm / 247

12:20 Encounter Unknown metal pipe
orientated parallel to gas line
(possible remote fill line
for old waste oil tank inside)

12:30 Ex A-4 @ 2-2.5' bgs
@ 10' East of Wood Door.
- coarse sand - fine gravel, sorted,
wet,
strong petro. odor, heavy sheen,
PID = 331 ppm

13:00 Ex A-5 @ 5-6' bgs
@ 25' East of Wood Door (SE Corner of Bldg.)
- fine gravel, w/ silts,
saturated,
strong petro. odor, heavy sheen,
PID = 327 ppm

033-1335-004

14:00 Begin Trenching / Test Pitting in Lower portion of site @ Excavation Area #2 (ExB)

Trench at South end of ExB (TP-1) orient. N-S

ExB-TP-1

- Cobbles w/ fine silts, poor sorting, very compacted, mod reduced odor/weathered petro
  GW flowing into trench @ 4.5-5' bgs no sheen
- black gravelly sands @ 2.5-4.5' moist, strong petro. odor, heavy sheen (tar-like odor, heavy, reduced)

EXB-1-5 (concrete remnants) PID = ~~133~~ 99.5 ppm

- wood, debris, + trash encountered @ 2-4.5'

4-5' = very hard, black, tar-like layer, appears to be asphalt,

5-6' = very large chunks of concrete

14:30 Trench TP-2 (E-W),
- water entering hole @ 4.5-5' bgs,
- petro-impacted soil @ 2.5-4.5', patches of v. strong petro. odor/staining

Area of dark gray silty sand w/ v. strong petro odor + sheen on g.w.
PID = ~~1222 ppm~~ 133 ppm

14:45 Test Pit ExB-TP-3
- cobbly gravels to 4.5', lt. brown w/ minor silts, damp
- g.w. entering hole @ 4.5' bgs, no sheen
- gravels @ 5.0 ft. = no petro odor, no stain, no sheen
  PID = 60.6 ppm

15:00 Test Pit ExB-TP-4
- compact lt. brown silty gravel @ 0-1.5'
- dark brown-black gravelly cobbles w/ wood debris, metal remnants (ie, gas can, street signs, 55-gal drum lids) @ 1.5-3'

~~reddish brown clay @ 4-6'~~
- dark, black moist sandy gravel layer @ 3-4', moderate petro. odor, light sheen/stain.
- ~~after light to 6'~~

@ 4-6' = lt. brown to reddish brown clay, moist, med. dense, remnants of organic debris (roots) (i.e., wetland sed's.)
- little to no petro. odor, no stain

Dig to 6' into clay, no water.
After 2 min, water begins gurgling up rapidly from bottom of hole.
- Heavy sheen on water, strong petro. odor

(soil impacts to 4' bgs, g.w. impacts)

@3-4' - PID = 44.5 ppm
@5-6' - PID = 88.6 ppm

15:20 Test Pit ExB-TP-5

0-1' = cemented gravelly silts, @
1-2.5' = dark brown-black silty clay, mod. petro. odor, no sheen
2.5-6' = reddish brown clay, root fragments, med. dense, no petro. odor, no sheen

G.W. entering hole @ 6' = no sheen, PID = 24.8 ppm

033-1335-004

9/15/05

0825 E_xB-TP-6
@ SW Corner of Excavation Area 2

0-1' Asphalt surface, underlain by old layers of asphalt.

1-3' Silty gravels w/ cobbles, well-rounded river rocks, sorted, dry, underlaid by large concrete remnants,

3-4' Sandy gravel, dark gray, moist, mod. petro. odor, mod. staining, Groundwater emerging at 4'

@ 4' - PID = 384 ppm

09:15 E_xB-TP-7
@ paved area adjacent to metal bldg.

0-0.5 asphalt

0.5-2.5' Silty cobbles, round river rocks, sorted, dry

2.5-3' sandy gravel dark gray, wet minor petro. odor, no sheen

Groundwater emerging @ 2.5' PID = 228 ppm

Petro Flag Analysis

Sc-7	23.3°C	
Blank	0	
Csd (Standard)	1500	1448
E_xA-1	797	781
E_xA-2	> EEE	
E_xA-3	45	61
E_xB-1	> EEE	
E_xB-7	687	676

17:30 Ted notify PVM that we Cannot Release water before 28th prior to City decision (City Council Meeting)
Must collect effluent sample from:
① from Tank
② after Carbon

35 gpm into City line (in Contract)
Gravel pre-filter & reduce sed's.

9/16/05

0800 Discuss issues regarding discharge of water from Baker Tanks, thru Carbon filter, + into City Sanitary Sewer line.
PVM notify Garrett that cannot discharge into City Sewer until 9/28.
Garrett planning on pumping 200 - 300 gpm into Baker Tanks as soon as excavating begins next week - Expecting to fill 20,000 gal Tank in 1-day - in order to keep up with anticipated groundwater.
Garrett wants to discharge 50 gpm into City Sewer & PVM reminds Garrett that Contract calls for 30 gpm discharge.

09:00 PVM + Garrett discuss gw. issues w/ Tim in City Office
- Tim aware that cannot discharge to City Sewer prior to 9/28.

09:30 Sandra (WDOE) arrives to tour site, observe water at Excavation #1.

033-1335-004

10:00 PVM call Ted Norton to inform of logistical issues w/ not being able to discharge prior to 9/28. Ted says should not be an issue if stick to schedule in contract.

Pro-Cut folks arrive to cut concrete on base of bldg. at Area 1 to begin setting pier supports on Mon.

Excavation at Area 1 filling w/ g.w., heavy sheen on water surface. AEC begins stringing hose line from Excavation #1 to Baker Tanks. Second Baker Tank arrives at site.

Garrett expects haul trucks to arrive at site on Wed., 9/21.

033-1335-004

9/19/05

0945 PVM arrive at site.
Excavations Pits @ EX1 filled w/groundwater,
- heavy sheen on water surface in lowest part of excavation, flocking w/ soil particles, disseminated

- light sheen patches on water surface.

PVM skimm oil off water surface w/ oil pads + oil booms,

Pump water out of hole + into Baker Tank.

1100 Cement Cutters arrive to finish cutting building footing.

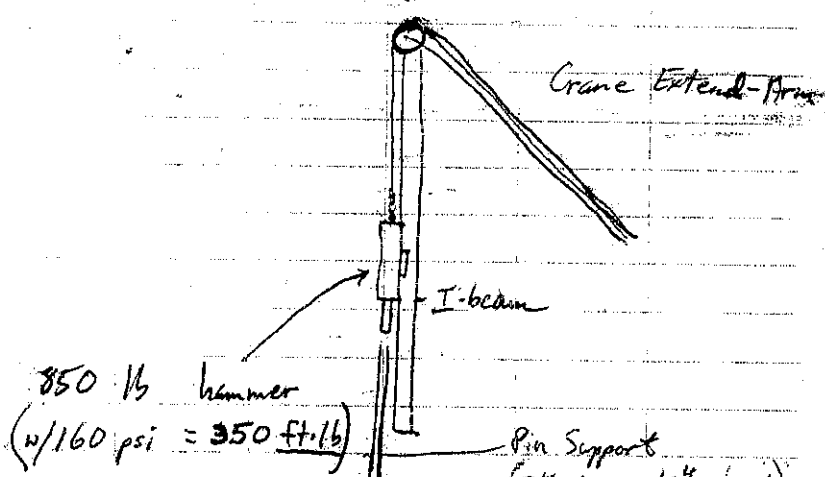
AEC crew arrives on-site.
- inspect excavation at EX1
- assess gw issues
- prepare for crane @ EX1
- begin hook-up Carbon Filter to Baker Tanks.

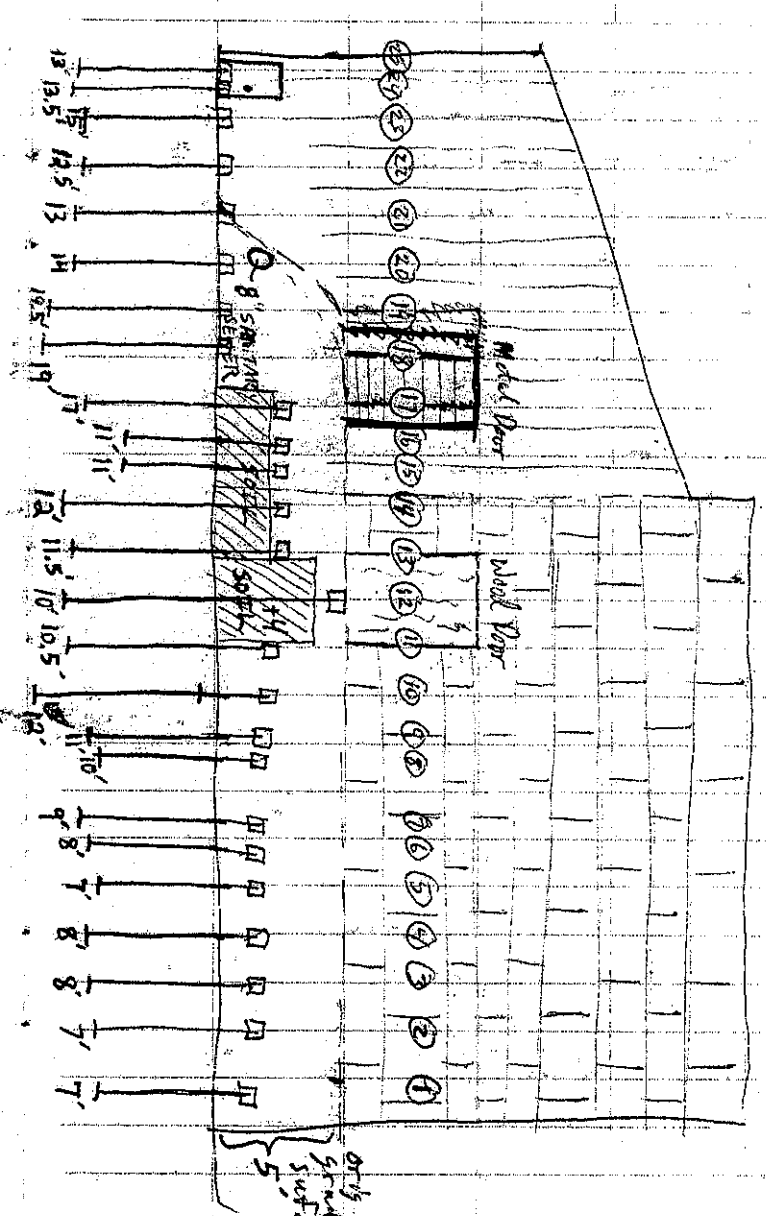
PVM discuss water sampling task w/ On-Site Lab – order bottles for TPH-Diesel + Bromodichloromethane
(2x ½L Amber) (3x VOA vial)

9/20/05

0730 PVM arrive at Site
AEC crew preparing EX1 area for Versatile Drilling crew to begin setting pin-supports

Ted working on letter to City of ML & WDOE to get permission for discharge of Treated Water to City Sanitary Sewer





033-1335-004

9/20

10:30 Weekly Meeting w/ City of ML folks, Tim + Gerry

~~Action Items~~ Discuss:

① 1½" unknown metal pipe @ EX1 w/ potential mastic wrap? - Store on-site

② - appears to be old gas line
- NOT on any diagrams
- No oil on inside (clean)

③ - Tim says to Store on-site

② Remove + replace Catch Basin on N-side of Sweeper Pit @ EX2?
- AEC additional Line Item.

3/4" fitting w/ King Nipple

- bad weld on outlet port
- need new Carbon Cartridge

9/20/05

③ Buried Perf-Pipe @ EX2
- not on figures
- Replace, but NOT LINE ITEM.

④ Hydrant Replacement?
- Use ALL NEW REPLACEMENT PARTS

④ - Must Pot-Hole to see existing lines
④ - Thrust Block
- Mega-Lug

⑤ WATER DISCHARGE from Baker Tanks?!
- must meet City Discharge Limits for Drinking Water
  - Fats, oils, grease
  - Metals (As)
  - TPH-Dx

⑥ Procter for Import Backfill from Western Pacific Engineering, Approved by Gerry - signed copy.

Gerry's Concerns
- Bracketing Plan For Versatile Drilling appears excessive & overload. (Reduce Plan w/ Engineer Stamp)

- Need Approval on Monolithic Concrete!
- Slow turn-around time for analytical results.

033-1335-004

Action Items ① Speed-up analytical turn-around
- Gerry suggests Cascade Analytical in Wenatchee (mention City of Moses Lake)
- Steve Anderson suggests Wy'East Environmental in Portland (mention AEC)
  TED says stay w/ On-Site
  ↳ Cascade does NOT do TPH analyses.

On-Site can ~~perform~~ start analyses if samples arrive by 3:30

PVM find out FedEx + UPS shipping schedule
Ted gather info from labs to see if accredited by Wash. State.

14:00 AEC crew gathering pump + piping parts for Carbon Cartridge.

18:00 AEC crew complete hook-up of pump system for Carbon Cartridge - Fill cartridge. w/ site water from Baker tank, allow 2-hrs. for carbon to activate.

20:30 PVM return to site to collect water sample on downstream end of Carbon Treatment

9/21/05

07:30 Discover that Carbon Cartridge has bad weld on outlet port, leaking water + loosing pressure. AEC crew begin disconnect pump/piping from Carbon Filter. Order new Carbon Cartridge for delivery to site tomorrow AM.

10:00 Gerry (CML) arrives + gives AEC crew VERBAL PERMISSION to discharge Carbon-Treated water into City Sanitary Sewer, until a negative analytical result is produced. AEC crew working on Treatment pump/piping.

13:30 E-mail from Scott Mallery (WDOE) indicates "not allowed" to discharge treated water until after confirm w/ lab analytical results

PVM send Carbon Treated Water sample to OnSite Env'l. Lab, priority overnight UPS delivery for Same-Day Turn Around of analytical

18:00 AEC crew off-site.
Versatile Drilling crew finishing-up pin-support install on S-side maintenance bldg.

9/22/05

9:00 New Carbon Cartridge on-site to replace one with welding defect.

9:30 Charge carbon cartridge with water from fire hydrant, & allow 2 hrs. for Charcoal to activate (according to manufacturer = Clean Environmental Concepts (Vancouver WA)

10:00 Gerry (CMLL) arrives to inform us that City Council is having meeting today to discuss discharge requirements

10:30 Tim Varney ~~asks~~ asks us to please NOT discharge until water analytical results have come back.

PVM call On-Site Lab to see if water samples have arrived yet - no samples at lab!
UPS Tracking center says cooler was delivered to address on label at 8:30 am & signed by "Sakota"

UPS unable to find cooler
On-Site attempts to track package locations.

~~The~~ Haul Truck #1 arrives at site. (scales built-in on trucks)

11:00 Load ~30 tons soil from EX-1, send ~~Truck~~ #1 to dump at WM in Wenatchee (expect 3-hr R.T.)

12:15 Haul Truck #2 arrives, load w/ ~30 tons from EX-1, send Truck #2 to dump at WM.

13:00 Peggy from On-Site Lab calls PVM to inform that UPS has located cooler, will have water samples in 30-min., On-Site will begin processing samples, but will have results tomorrow.

14:00 PVM + AEC crew prepare Carbon Canister to pump g.w. in Baker Tank-1 through Carbon Filter - hook up pump, attach hoses, turn on pump.

033-1335-004

14:30 Carbon Canister pressurized to 11psig

Tim Varney arrives to inform that we have been asked by City to NOT discharge to sanitary sewer until analytical results back from sample collected at downstream side of Carbon Treatment.

AEC crew pumping Baker Tank water through Carbon Filter, meas 5 gal / 13 sec = 23 gpm. Pump for ~10 min., then pump stop (overheat or blown circuit?!) Unplug pump

15:00 3rd Haul Truck arrive at site, load w/30 tons from EX-1, ~~send to WM to dump load~~ plan to dump load at WM in morning

16:00 4th Haul Truck arrive at site, load w/30 tons from EX-1, pre-loaded to dump at WM in morning.

16:20 PVM collect soil samples from EX-1 [EX-1-A(5'), EX-1-B(2'), EX-1-C(7')] deliver to FedEX for overnight delivery to On Site Environmental. Collect full suite of water samples from Carbon Treatment system #2 (BT-1-2600) Ted decides to use Wy East Env'l. Lab for soil samples to provide quick 4-hr. Turnaround. Ted says to still send water samples to On Site Env'l. Lab.

(~600 gal flushed through Carbon Filter after being removed from onsite water)

18:25 PVM deliver 3 soil samples & Water Sample (BT-1-2600) to FedEx shipping office at Spokane Airport to ship to On-Site Environmental.

033-1335-004

9/23/05

07:30 PVM at Site. Pump ~1000 gal out of EX-1. Haul Truck #5550 returns after dumping pre-load at WM @ 6:00 AM. Load Truck #5550 @ EX-1, send to WM.

08:00 Haul Truck #21 return from dumping pre-load at WM @ 6:15 AM. Load Truck #21 @ EX-1, send to WM –

AEC crew still expecting 2-additional haul trucks to arrive AM.

09:00 AEC crew try pumping Baker Tank water through carbon filter, pumping @ 5 gal/8.5 sec = 35 gpm. Pump for 5 min, then pump overheats.

AEC crew work on pump wiring.

10:00 Discover that pump is wired for 230 v, & hooked-up to 110 v.

10:40 Pump re-wired. Pumping through Carbon Filter @ 35 gpm. Pump run for 10 min, then blow circuit breaker in bldg.

Water gravity-drain through Carbon Filter @ 5.5 gpm.

12:00 longer extension cord ↑ Resistance, ↑ Resis, ↓ Volts = ↑ Amps = Blow 20 Amp Circuit

13:00 PVM collect water sample EX-1-GW from ~6" below water surface in excavation-1 (~1.5' water filling pit at time of collection)

PVM collect water sample BT-1-OUT from outflow pipe on Baker Tank #1 (situated @ 1' above tank bottom).

PVM collect water sample CF-2-OUT from outflow pipe on Carbon Filter #2 (@ bottom of cartridge)

Sunny, warm 41
74°, warmed

9/26/05

6:45 AEC Crew (Garrett + Randy) at site.
Pump ~2000 gal. from excavation pit EX-1 to Baker Tank

07:30 Fill Truck # @EX-1 (center)
Fill Truck # @EX-1 (center)

09:00 PVMI (Golder) arrive at site.
Only 2-haul trucks running, so Garrett looking-over backfill specs for EX-1.
Trucks may need some engineered coarse gravels to lay below backfill & in g.w. zone.
- AEC crew construct wood/gravel berm over pump hose for haul trucks to cross hose.
- AEC crew adjust hose attachment from Baker Tank #1 to outlet on higher end @ 3' above tank bottom

11:30 Pump ~ 1000 gal. out of EX-1 to Baker Tank-1.

AEC Excavator = CAT 320C (track mount)

11:35 Haul Truck # 5550 arrive at site

Haul Truck #21 getting Flat tire on trailer fixed.

12:30 Ted gets As data from lab:

EX-1-GW = 11 ppb $As_{TOT.}$ (µg/L)

BT-1-OUT = 36 µg/L $As_{TOT.}$

CF-2-OUT = 20 µg/L $As_{TOT.}$

(WDOE cleanup = 5 µg/L As)

After Ted discuss w/ WDOE, State will allow Discharge of ≤30 µg/L As to City of Moses Lake Sanitary Sewer system

Must test once/week.

9/27

Load 2 trucks from EX-1.

10:30 Meeting w/ Gerry + Tim (CML)

14:00 PVM collect rinsate sample from Baker Tank #2 (prior to use w/ excavation water).

Rinse w/ water from fire hydrant next to Sweeper Pit, collect rinsate sample, submit to On Site for analysis of Total As, Cd, Cr, Cu, Pb, Zn, Hg, + Ag.

SPHW-1 = Sweeper Pit Hydrant Water (used to rinse inside BT-2).

BT-2-RS0927 = Rinsate Sample from Baker Tank #2.

(BT-2 = clean inside, shiny-grey protective coating ~~spray-on~~ covering inside of tank)

(BT-1 = rusty inside, heavily used, unlined

APPENDIX A

FIELD DOCUMENTATION

City of Moses Lake – Maintenance Facility CAP – Field Notebook

Volume I – 9/12/05 – 9/27/05

Todd Morris (425) 556-5554 x. 2015

Garret Hale cell: (360) 957-1488
office: (360) 577-9194

AEC – Excavator = CAT 320C, track mount
Dozer = CAT 938G, tire mount

COPY

033-1335-004

9/12/05

10:00 Kick-off meeting at site

City of Moses Lake:
Gary McFaul
Tim Varney

Anderson Environmental
Kelly Kellogg
Garrett Hale

WA DOE
Sandra Treccani

Golder
Steve VanSlyke
Paul VanMiddlesworth
Ted Norton

14:30 MW-11

w.l. = 5.5' bgs

~2" free Product on top of wt.

pump ~ 1 gal prod/water

-thick, black oil product (Heavy), heavy sheen, strong hydrocarb. odor

15:00 after 30 min, ~ 1" free prod. entering well

pump another gallon prod/water.

16:15 Pump gallon #3 from MW-11 = heavy oil + water

15:40 MW-16

w.l. = 2.5' bgs.

No free prod. in well, no odor, no sheen.

Dx & Petra Fitzgerald

9/13/05 Sunny, warm (80°), clear

0800 PVM on site.

Discuss design of Export Stockpile area for Test Pit material.

0900 Confirm w/ Mark Ader (WDOE-Spo.) that Certified Driller must Abandon & Decommission MW-11 & -16 since well bottom is below anticipated depth of excavation.

1000 Pump 1-gal of free prod./water from MW-11.

Calibrate field meters:

PID - calibrated to 99.7 using 100.0 ppm std.

Golder # SEA0256 - PE PhotoVac 2020

Serial # ED HE 332

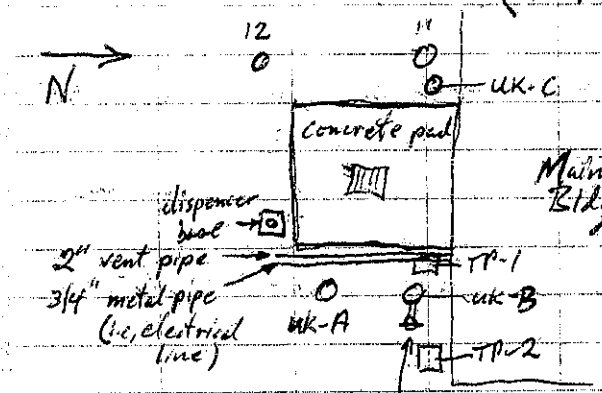
Calib. Gas = Byrne Specialty Gases 100 ppm IsoButylene

Lot # LTM214CM

Exp. Dec. 2007

1100 Begin digging Test Pit @ Area 1.

Encounter 2 monitor wells on East side of wash rack. (4" PVC) - No free petro. product in 2 unknown wells.



horiz. PVC attached to top of MW

Top of unknown MW's @ 8" bgs, under gravel.

TP-1 Petro. impacted dirt encountered @ 2' bgs -2.5'
- loose gravelly sand
- heavy sheen, strong petro. odor
PID = 580 ppm

TP-2 Sandy gravel, loose

Petro-impacted soil encountered @ 2.5' bgs
- heavy sheen, strong petro. odor
PID = 191 ppm

- 6" Non-friable Asbestos/Concrete ~~west UK-B~~ pipe encountered @ 2' bgs., does not appear to be connected to anything, just backfilled at location of Removed UST

well UK-A = no petro. prod. on water
= w.l. = 2.25' bgs
= 4" PVC
(Bottom = 5.5' bgs)

well UK-B = w.l. = 2.5' bgs
= no free petro. prod. on water
(horiz. PVC pipe oriented E-W connect to east side of TOC)
= 4" PVC
(TD = 6.5' bgs)

033-1335-004

well UK-C = w.l. = 4.5' bgs
= Free Prod. on water
(horiz PVC pipe oriented
N-S connect to S-side of TOC
= 4" PVC
(TD = 6.5' bgs)

Sandra (WDOE) calls to inform
that ~~@~~:
- if know construction of UK wells,
then just bent. backfill + cut-off.

- If Don't know construct.,
the must perf. well, backfill, +
overdrill.

Irrigators, Inc. & bentonite

Holt Drilling & arrives to Abandon wells

MW-16 = TD = 14' - fill w/ bentonite chips, hydrate
WDOE #: AHJ373

MW-11 = TD = 13.7' - fill w/ bentonite chips, hydrate

~~####~~ UK-A = TD = 5.5'
fill w/ bentonite chips, hydrate

UK-B = TD = 6.5'
fill w/ bentonite chips, hydrate

UK-C = TD = 6.5'
Purge 2.5 gal oil/water,
fill w/ bentonite,
hydrate

033-1335-004

12

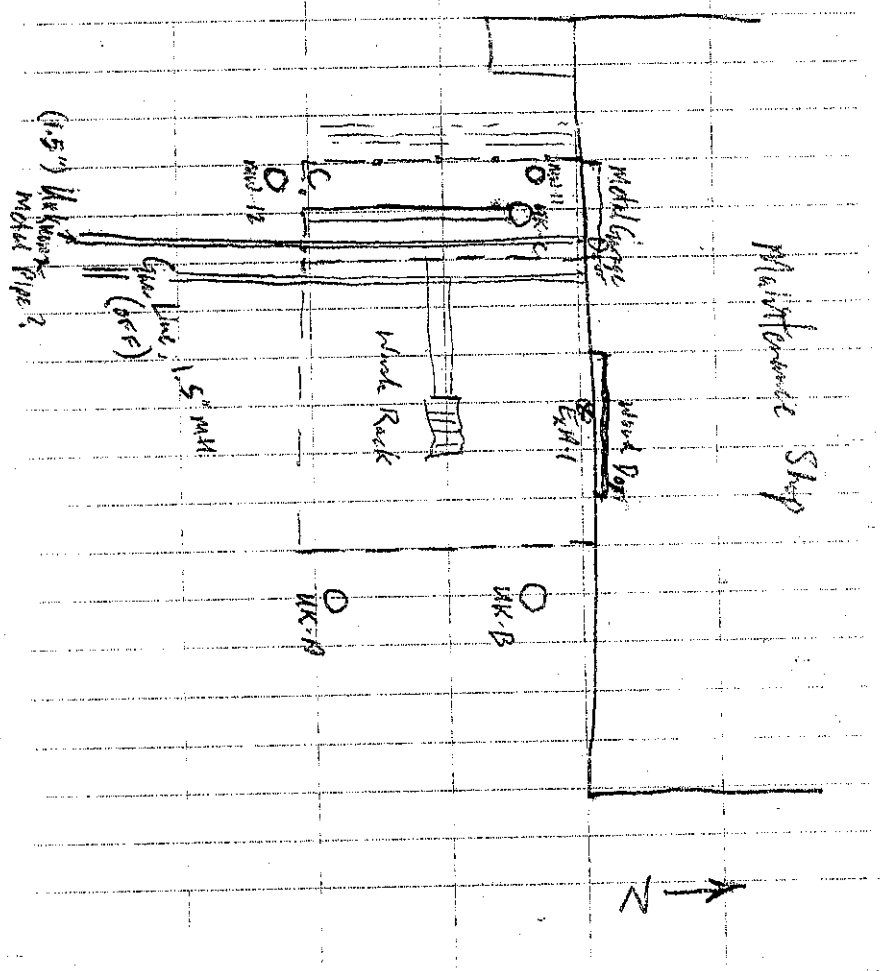
13

9/14/85

Sunny (80°F) hot, no breeze.

Excavation

Begin excavating in Area #1 (EA-1)



033-1335-004

11:30 Collect Sample Ex A-1
@ beneath footwall @ Wood Door
EXA-1-2.5 @ 2.0-2.5' bgs (Photo)
- Dark Gray silty sand, wet,
strong petro. odor, med. sheen
PID = 543 ppm / 420

11:40 Sample Ex A-2 @ 4.5-5' bgs
beneath footwall @ Metal Door
EXA-2-5 - coarse gravel, saturated,
angular, sorted,
v. strong petro odor, heavy sheen
PID = 1093 ppm / 453

12:00 Sample Ex A-3 @ 1.5-2' bgs
@ footwall @ 5' w. of Metal Door
EXA-3-2 - silty sand, wet,

PID = 75.9 ppm / 247

12:20 Encounter Unknown metal pipe
orientated parallel to gas line
(possible remote fill line
for old waste oil tank inside)

12:30 Ex A-4 @ 2-2.5' bgs
@ 10' East of Wood Door.
- coarse sand - fine gravel, sorted,
wet,
strong petro. odor, heavy sheen,
PID = 331 ppm

13:00 Ex A-5 @ 5-6' bgs
@ 25' East of Wood Door (SE Corner of Bldg.)
- fine gravel, w/ silts,
saturated,
strong petro. odor, heavy sheen,
PID = 327 ppm

033-1335-004

14:00 Begin Trenching / Test Pitting in Lower portion of site @ Excavation Area #2 (ExB)

Trench at South end of ExB (TP-1) orient. N-S

ExB-TP-1

- Cobbles w/ fine silts, poor sorting, very compacted, mod reduced odor/weathered petro
  GW flowing into trench @ 4.5-5' bgs no sheen
- black gravelly sands @ 2.5-4.5' moist, strong petro. odor, heavy sheen (tar-like odor, heavy, reduced)

EXB-1-5 (concrete remnants) PID = ~~133~~ 99.5 ppm

- wood, debris, + trash encountered @ 2-4.5'

4-5' = very hard, black, tar-like layer, appears to be asphalt,

5-6' = very large chunks of concrete

14:30 Trench TP-2 (E-W),
- water entering hole @ 4.5-5' bgs,
- petro-impacted soil @ 2.5-4.5', patches of v. strong petro. odor/staining

Area of dark gray silty sand w/ v. strong petro odor + sheen on g.w.
PID = ~~1222 ppm~~ 133 ppm

14:45 Test Pit ExB-TP-3
- cobbly gravels to 4.5', lt. brown w/ minor silts, damp
- g.w. entering hole @ 4.5' bgs, no sheen
- gravels @ 5.0 ft. = no petro odor, no stain, no sheen
  PID = 60.6 ppm

15:00 Test Pit ExB-TP-4
- compact lt. brown silty gravel @ 0-1.5'
- dark brown-black gravelly cobbles w/ wood debris, metal remnants (ie, gas can, street signs, 55-gal drum lids) @ 1.5-3'

~~reddish brown clay @ 4-6'~~
- dark, black moist sandy gravel layer @ 3-4', moderate petro. odor, light sheen/stain.
- ~~after light to 6'~~

@ 4-6' = lt. brown to reddish brown clay, moist, med. dense, remnants of organic debris (roots) (i.e., wetland sed's.)
- little to no petro. odor, no stain

Dig to 6' into clay, no water.
After 2 min, water begins gurgling up rapidly from bottom of hole.
- Heavy sheen on water, strong petro. odor

(soil impacts to 4' bgs, g.w. impacts)

@3-4' - PID = 44.5 ppm
@5-6' - PID = 88.6 ppm

15:20 Test Pit ExB-TP-5

0-1' = cemented gravelly silts, @
1-2.5' = dark brown-black silty clay, mod. petro. odor, no sheen
2.5-6' = reddish brown clay, root fragments, med. dense, no petro. odor, no sheen

G.W. entering hole @ 6' = no sheen, PID = 24.8 ppm

033-1335-004

9/15/05

0825 E_xB-TP-6
@ SW Corner of Excavation Area 2

0-1' Asphalt surface, underlain by old layers of asphalt.

1-3' Silty gravels w/ cobbles, well-rounded river rocks, sorted, dry, underlaid by large concrete remnants,

3-4' Sandy gravel, dark gray, moist, mod. petro. odor, mod. staining, Groundwater emerging at 4'

@ 4' - PID = 384 ppm

09:15 E_xB-TP-7
@ paved area adjacent to metal bldg.

0-0.5 asphalt

0.5-2.5' Silty cobbles, round river rocks, sorted, dry

2.5-3' sandy gravel dark gray, wet minor petro. odor, no sheen

Groundwater emerging @ 2.5' PID = 228 ppm

Petro Flag Analysis

Sc-7	23.3°C	
Blank	0	
Csd (Standard)	1500	1448
E_xA-1	797	781
E_xA-2	> EEE	
E_xA-3	45	61
E_xB-1	> EEE	
E_xB-7	687	676

17:30 Ted notify PVM that we Cannot Release water before 28th prior to City decision (City Council Meeting)
Must collect effluent sample from:
① from Tank
② after Carbon

35 gpm into City line (in Contract)
Gravel pre-filter & reduce sed's.

9/16/05

0800 Discuss issues regarding discharge of water from Baker Tanks, thru Carbon filter, + into City Sanitary Sewer line.
PVM notify Garrett that cannot discharge into City Sewer until 9/28.
Garrett planning on pumping 200 - 300 gpm into Baker Tanks as soon as excavating begins next week - Expecting to fill 20,000 gal Tank in 1-day - in order to keep up with anticipated groundwater.
Garrett wants to discharge 50 gpm into City Sewer & PVM reminds Garrett that Contract calls for 30 gpm discharge.

09:00 PVM + Garrett discuss gw. issues w/ Tim in City Office
- Tim aware that cannot discharge to City Sewer prior to 9/28.

09:30 Sandra (WDOE) arrives to tour site, observe water at Excavation #1.

033-1335-004

10:00 PVM call Ted Norton to inform of logistical issues w/ not being able to discharge prior to 9/28. Ted says should not be an issue if stick to schedule in contract.

Pro-Cut folks arrive to cut concrete on base of bldg. at Area 1 to begin setting pier supports on Mon.

Excavation at Area 1 filling w/ g.w., heavy sheen on water surface. AEC begins stringing hose line from Excavation #1 to Baker Tanks. Second Baker Tank arrives at site.

Garrett expects haul trucks to arrive at site on Wed., 9/21.

033-1335-004

9/19/05

0945 PVM arrive at site.
Excavations Pits @ EX1 filled w/groundwater,
- heavy sheen on water surface in lowest part of excavation, flocking w/ soil particles, disseminated

- light sheen patches on water surface.

PVM skimm oil off water surface w/ oil pads + oil booms,

Pump water out of hole + into Baker Tank.

1100 Cement Cutters arrive to finish cutting building footing.

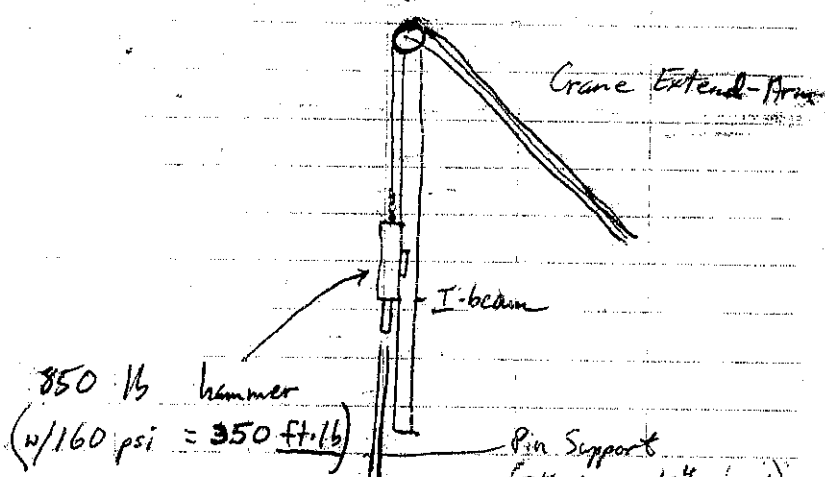
AEC crew arrives on-site.
- inspect excavation at EX1
- assess gw issues
- prepare for crane @ EX1
- begin hook-up Carbon Filter to Baker Tanks.

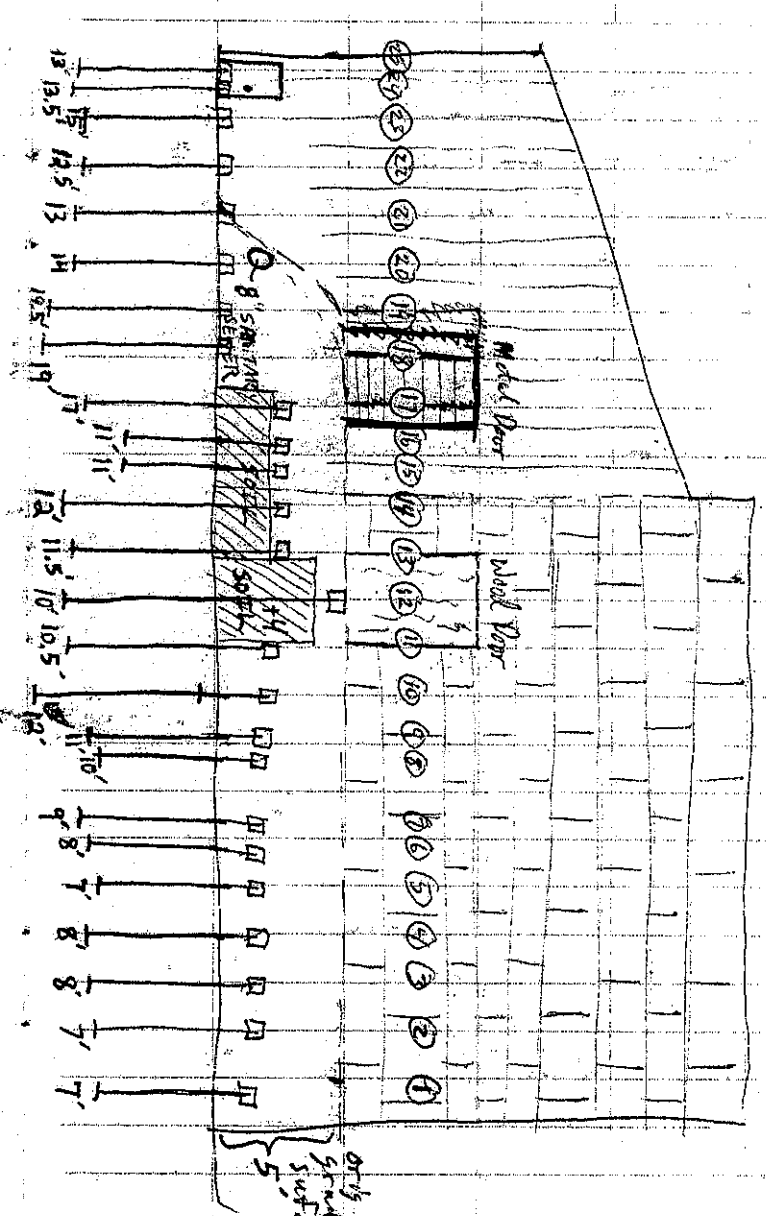
PVM discuss water sampling task w/ On-Site Lab – order bottles for TPH-Diesel + Bromodichloromethane
(2x ½L Amber) (3x VOA vial)

9/20/05

0730 PVM arrive at Site
AEC crew preparing EX1 area for Versatile Drilling crew to begin setting pin-supports

Ted working on letter to City of ML & WDOE to get permission for discharge of Treated Water to City Sanitary Sewer





033-1335-004

9/20

10:30 Weekly Meeting w/ City of ML folks, Tim + Gerry

~~Action Items~~ Discuss:

① 1½" unknown metal pipe @ EX1 w/ potential mastic wrap? - Store on-site

② - appears to be old gas line
- NOT on any diagrams
- No oil on inside (clean)

③ - Tim says to Store on-site

② Remove + replace Catch Basin on N-side of Sweeper Pit @ EX2?
- AEC additional Line Item.

3/4" fitting w/ King Nipple

- bad weld on outlet port
- need new Carbon Cartridge

9/20/05

③ Buried Perf-Pipe @ EX2
- not on figures
- Replace, but NOT LINE ITEM.

④ Hydrant Replacement?
- Use ALL NEW REPLACEMENT PARTS

④ - Must Pot-Hole to see existing lines
④ - Thrust Block
- Mega-Lug

⑤ WATER DISCHARGE from Baker Tanks?!
- must meet City Discharge Limits for Drinking Water
  - Fats, oils, grease
  - Metals (As)
  - TPH-Dx

⑥ Procter for Import Backfill from Western Pacific Engineering, Approved by Gerry - signed copy.

Gerry's Concerns
- Bracketing Plan For Versatile Drilling appears excessive & overload. (Reduce Plan w/ Engineer Stamp)

- Need Approval on Monolithic Concrete!
- Slow turn-around time for analytical results.

033-1335-004

Action Items ① Speed-up analytical turn-around
- Gerry suggests Cascade Analytical in Wenatchee (mention City of Moses Lake)
- Steve Anderson suggests Wy'East Environmental in Portland (mention AEC)
  TED says stay w/ On-Site
  ↳ Cascade does NOT do TPH analyses.

On-Site can ~~perform~~ start analyses if samples arrive by 3:30

PVM find out FedEx + UPS shipping schedule
Ted gather info from labs to see if accredited by Wash. State.

14:00 AEC crew gathering pump + piping parts for Carbon Cartridge.

18:00 AEC crew complete hook-up of pump system for Carbon Cartridge - Fill cartridge. w/ site water from Baker tank, allow 2-hrs. for carbon to activate.

20:30 PVM return to site to collect water sample on downstream end of Carbon Treatment

9/21/05

07:30 Discover that Carbon Cartridge has bad weld on outlet port, leaking water + loosing pressure. AEC crew begin disconnect pump/piping from Carbon Filter. Order new Carbon Cartridge for delivery to site tomorrow AM.

10:00 Gerry (CML) arrives + gives AEC crew VERBAL PERMISSION to discharge Carbon-Treated water into City Sanitary Sewer, until a negative analytical result is produced. AEC crew working on Treatment pump/piping.

13:30 E-mail from Scott Mallery (WDOE) indicates "not allowed" to discharge treated water until after confirm w/ lab analytical results

PVM send Carbon Treated Water sample to OnSite Env'l. Lab, priority overnight UPS delivery for Same-Day Turn Around of analytical

18:00 AEC crew off-site.
Versatile Drilling crew finishing-up pin-support install on S-side maintenance bldg.

9/22/05

9:00 New Carbon Cartridge on-site to replace one with welding defect.

9:30 Charge carbon cartridge with water from fire hydrant, & allow 2 hrs. for Charcoal to activate (according to manufacturer = Clean Environmental Concepts (Vancouver WA)

10:00 Gerry (CMLL) arrives to inform us that City Council is having meeting today to discuss discharge requirements

10:30 Tim Varney ~~asks~~ asks us to please NOT discharge until water analytical results have come back.

PVM call On-Site Lab to see if water samples have arrived yet - no samples at lab!
UPS Tracking center says cooler was delivered to address on label at 8:30 am & signed by "Sakota"

UPS unable to find cooler
On-Site attempts to track package locations.

~~The~~ Haul Truck #1 arrives at site. (scales built-in on trucks)

11:00 Load ~30 tons soil from EX-1, send ~~Truck~~ #1 to dump at WM in Wenatchee (expect 3-hr R.T.)

12:15 Haul Truck #2 arrives, load w/ ~30 tons from EX-1, send Truck #2 to dump at WM.

13:00 Peggy from On-Site Lab calls PVM to inform that UPS has located cooler, will have water samples in 30-min., On-Site will begin processing samples, but will have results tomorrow.

14:00 PVM + AEC crew prepare Carbon Canister to pump g.w. in Baker Tank-1 through Carbon Filter - hook up pump, attach hoses, turn on pump.

033-1335-004

14:30 Carbon Canister pressurized to 11psig

Tim Varney arrives to inform that we have been asked by City to NOT discharge to sanitary sewer until analytical results back from sample collected at downstream side of Carbon Treatment.

AEC crew pumping Baker Tank water through Carbon Filter, meas 5 gal / 13 sec = 23 gpm. Pump for ~10 min., then pump stop (overheat or blown circuit?!) Unplug pump

15:00 3rd Haul Truck arrive at site, load w/30 tons from EX-1, ~~send to WM to dump load~~ plan to dump load at WM in morning

16:00 4th Haul Truck arrive at site, load w/30 tons from EX-1, pre-loaded to dump at WM in morning.

16:20 PVM collect soil samples from EX-1 [EX-1-A(5'), EX-1-B(2'), EX-1-C(7')] deliver to FedEX for overnight delivery to On Site Environmental. Collect full suite of water samples from Carbon Treatment system #2 (BT-1-2600) Ted decides to use Wy East Env'l. Lab for soil samples to provide quick 4-hr. Turnaround. Ted says to still send water samples to On Site Env'l. Lab.

(~600 gal flushed through Carbon Filter after being removed from onsite water)

18:25 PVM deliver 3 soil samples & Water Sample (BT-1-2600) to FedEx shipping office at Spokane Airport to ship to On-Site Environmental.

033-1335-004

9/23/05

07:30 PVM at Site. Pump ~1000 gal out of EX-1. Haul Truck #5550 returns after dumping pre-load at WM @ 6:00 AM. Load Truck #5550 @ EX-1, send to WM.

08:00 Haul Truck #21 return from dumping pre-load at WM @ 6:15 AM. Load Truck #21 @ EX-1, send to WM –

AEC crew still expecting 2-additional haul trucks to arrive AM.

09:00 AEC crew try pumping Baker Tank water through carbon filter, pumping @ 5 gal/8.5 sec = 35 gpm. Pump for 5 min, then pump overheats.

AEC crew work on pump wiring.

10:00 Discover that pump is wired for 230 v, & hooked-up to 110 v.

10:40 Pump re-wired. Pumping through Carbon Filter @ 35 gpm. Pump run for 10 min, then blow circuit breaker in bldg.

Water gravity-drain through Carbon Filter @ 5.5 gpm.

12:00 longer extension cord ↑ Resistance, ↑ Resis, ↓ Volts = ↑ Amps = Blow 20 Amp Circuit

13:00 PVM collect water sample EX-1-GW from ~6" below water surface in excavation-1 (~1.5' water filling pit at time of collection)

PVM collect water sample BT-1-OUT from outflow pipe on Baker Tank #1 (situated @ 1' above tank bottom).

PVM collect water sample CF-2-OUT from outflow pipe on Carbon Filter #2 (@ bottom of cartridge)

Sunny, warm 41
74°, warmed

9/26/05

6:45 AEC Crew (Garrett + Randy) at site.
Pump ~2000 gal. from excavation pit EX-1 to Baker Tank

07:30 Fill Truck # @EX-1 (center)
Fill Truck # @EX-1 (center)

09:00 PVMI (Golder) arrive at site.
Only 2-haul trucks running, so Garrett looking-over backfill specs for EX-1.
Trucks may need some engineered coarse gravels to lay below backfill & in g.w. zone.
- AEC crew construct wood/gravel berm over pump hose for haul trucks to cross hose.
- AEC crew adjust hose attachment from Baker Tank #1 to outlet on higher end @ 3' above tank bottom

11:30 Pump ~ 1000 gal. out of EX-1 to Baker Tank-1.

AEC Excavator = CAT 320C (track mount)

11:35 Haul Truck # 5550 arrive at site

Haul Truck #21 getting Flat tire on trailer fixed.

12:30 Ted gets As data from lab:

EX-1-GW = 11 ppb $As_{TOT.}$ (µg/L)

BT-1-OUT = 36 µg/L $As_{TOT.}$

CF-2-OUT = 20 µg/L $As_{TOT.}$

(WDOE cleanup = 5 µg/L As)

After Ted discuss w/ WDOE, State will allow Discharge of ≤30 µg/L As to City of Moses Lake Sanitary Sewer system

Must test once/week.

9/27

Load 2 trucks from EX-1.

10:30 Meeting w/ Gerry + Tim (CML)

14:00 PVM collect rinsate sample from Baker Tank #2 (prior to use w/ excavation water).

Rinse w/ water from fire hydrant next to Sweeper Pit, collect rinsate sample, submit to On Site for analysis of Total As, Cd, Cr, Cu, Pb, Zn, Hg, + Ag.

SPHW-1 = Sweeper Pit Hydrant Water (used to rinse inside BT-2).

BT-2-RS0927 = Rinsate Sample from Baker Tank #2.

(BT-2 = clean inside, shiny-grey protective coating ~~spray-on~~ covering inside of tank)

(BT-1 = rusty inside, heavily used, unlined

Golder Associates
18300 NE Union Hill Road, Suite 200
Redmond, WA USA 98052-3333
Tel: (425) 883-0777
Fax: (425) 882-5498

DATE: Monday, December 12, 2005	JOB NO: 033-1335-004
PROJECT: Moses Lake / Maintenance Facility Remedial Action	
LOCATION: Moses Lake, Washington	
CONTRACTOR: Anderson Environmental	OWNER: City of Moses Lake
WEATHER:	TEMP: ° at AM ° at PM
PRESENT AT SITE: Golder – Steve Van Shaar	
Anderson – Garret Hale	

TO: City of Moses Lake – Gerry McFaul

ON SITE: **OFF SITE:**

THE FOLLOWING WAS NOTED:

Activities
Crushed surfacing from the haul road was used as backfill. The water tanks were emptied. A test pit was excavated on the south shoulder of Penn Street.

Observations
The work proceeded in general accordance with the drawings, specifications, and Engineer's recommendations.

Sampling and Testing
One soil sample was collected from Penn Street.

Issues and Resolutions
1. During excavation in Penn Street, a 300-pair phone line was damaged. The utility owner (Quest) was contacted and they arrived to inspect the line. It appears that no working lines (if any) were damaged. The Contractor is responsible for repairing the line because his utility locate did not include Penn Street (although he thought it had and several other utilities in Penn Street had been marked).
2. Breakthrough of contamination through the carbon filter material had been noted in water samples sent to the lab. The Contractor and Engineer agreed to re-sample the next time the carbon vessels were used.

Outstanding Issues
There are no outstanding issues.

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FIELD REPORT

SIGNED:

Steven Van Shaar – Staff Engineer

Golder Associates
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Fax: (425) 882-5498

DATE: Tuesday, December 13, 2005	JOB NO: 033-1335-004
PROJECT: Moses Lake / Maintenance Facility Remedial Action	
LOCATION: Moses Lake, Washington	
CONTRACTOR: Anderson Environmental	OWNER: City of Moses Lake
WEATHER:	TEMP: ° at AM ° at PM
PRESENT AT SITE: Golder – Steve Van Shaar	
Anderson – Garret Hale	
Western Pacific – Robin Dull	

TO: City of Moses Lake – Gerry McFaul

ON SITE: OFF SITE:

THE FOLLOWING WAS NOTED:

Activities
Backfill continued in Excavation Area 2. A test pit was excavated on the north shoulder of Penn Street.

Observations
The work proceeded in general accordance with the drawings, specifications, and Engineer's recommendations.

Sampling and Testing
One soil sample was collected from Penn Street. Two soil samples (including yesterday's) were sent to the lab. Density testing at Excavation Area 2 was performed by Western Pacific Engineering. Tests indicated the backfill was not compacted to at least 90 percent of maximum dry density (measurements of 86 and 88 percent of maximum dry density were recorded). The low measurements were attributed to the frozen nature of the tested material. The material may have met compaction requirements when it was placed yesterday.

Issues and Resolutions
1. Previously, the Contractor was not authorized to excavate on the north side of Penn Street. However, prior to excavation today, it was confirmed by the City that the Department of Ecology matching funds would apply to any contaminated soil encountered in Penn Street as a continuation of Excavation Area 2. The City therefore authorized the Contractor to excavate a test pit on the north shoulder of Penn Street.

Outstanding Issues
There are no outstanding issues.

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TO: City of Moses Lake – Gerry McFaul

DATE: Wed, December 14, 2005	JOB NO: 033-1335-004
PROJECT: Moses Lake / Maintenance Facility Remedial Action	
LOCATION: Moses Lake, Washington	
CONTRACTOR: Anderson Environmental	OWNER: City of Moses Lake
WEATHER:	TEMP: ° at AM ° at PM
PRESENT AT SITE: Golder – Steve Van Shaar	
Anderson – Garret Hale	
City – Gerry McFaul, Tim Varney	

ON SITE: **OFF SITE:**

THE FOLLOWING WAS NOTED:

Activities
Quest was on-site to repair the damaged phone line. The Contractor finished installing the perforated pipe drains east of the fence which was removed.

Observations
The work proceeded in general accordance with the drawings, specifications, and Engineer's recommendations.

Sampling and Testing
Results were received from soil samples sent 12/13. The results indicated contamination levels meeting cleanup goals. Only the contaminated soil between the test pit on the south shoulder of Penn Street and the extent of the northwest portion of Excavation Area 2 remain to be excavated.

Coordination Meeting
The following items were noted in the coordination meeting:

1. The Contractor plans to work Monday through Thursday of next week and Tuesday through Friday of the following week.
2. The Contractor plans to work next on replacement of perforated pipe drains west of the fence which was removed. Excavation of contaminated soils will take place next week.
3. Steve Van Shaar will not be on site after December 22. The City was not sure if they wanted another person from Golder to be on-site after that.

Outstanding Issues
There are no outstanding issues.

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DATE: Thursday, December 15, 2005	JOB NO: 033-1335-004
PROJECT: Moses Lake / Maintenance Facility Remedial Action	
LOCATION: Moses Lake, Washington	
CONTRACTOR: Anderson Environmental	OWNER: City of Moses Lake
WEATHER:	TEMP: ° at AM ° at PM
PRESENT AT SITE: Golder – Steve Van Shaar Anderson – Garret Hale City – Tim Varney	

TO: City of Moses Lake – Gerry McFaul

ON SITE: **OFF SITE:**

THE FOLLOWING WAS NOTED:

Activities
The Contractor attempted to install perforated pipe drains on the west half of the fence which was removed. Upon exposing the upstream end of the existing pipe, the water that began to fill the excavation did not drain into the pipe, i.e. the pipe appeared to be plugged at some point downstream. The manhole just inside the west gate was pumped to expose the downstream end of the pipe, but no flow from the pipe was noted. The City will use their sewer cleanout tool tomorrow to open up the pipe.
A backhoe-mounting impact hammer arrived on-site for breaking up frozen ground to install the remaining drains.

Observations
The work proceeded in general accordance with the drawings, specifications, and Engineer's recommendations.

Sampling and Testing
No samples are outstanding. No samples were collected.

Outstanding Issues
Steve Van Shaar will not be on site after December 22. The City had not decided whether they want another person from Golder to be on-site after that.

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Steven Van Shaar – Staff Engineer

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Tel: (425) 883-0777
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TO: City of Moses Lake – Gerry McFaul

DATE: Monday, December 19, 2005	JOB NO: 033-1335-004
PROJECT: Moses Lake / Maintenance Facility Remedial Action	
LOCATION: Moses Lake, Washington	
CONTRACTOR: Anderson Environmental	OWNER: City of Moses Lake
WEATHER:	TEMP: ° at AM ° at PM
PRESENT AT SITE: Golder – Steve Van Shaar	
Anderson – Garret Hale	
Western Pacific – Robin Dull	

ON SITE: **OFF SITE:**

THE FOLLOWING WAS NOTED:

Activities
The Contractor removed the fence at the north property line in order to excavated contaminated soils between the previous extent of excavation and the test pit previously dug on the south shoulder of Penn Street. The Contractor excavated the contaminated soil and backfilled the area after soil samples had been collected by the Engineer.

Observations
The work proceeded in general accordance with the drawings, specifications, and Engineer's recommendations.

Sampling and Testing
Three soil samples were collected from the area excavated today and sent to the lab.
Density testing at Excavation Area 2 was performed by Western Pacific Engineering. Tests indicated the backfill was compacted to at least 90 percent of maximum dry density.

Issues and Resolutions
The City attempted to clean out the plugged drain pipe draining to the west without success. The City decided not to replace the drains which had been removed during excavation of contaminated soils. The City agreed to pay for materials on-site (perforated drain pipe and drain rock). A quantity of 71 tons of drain rock was agreed upon by the Contractor and the Engineer.

Outstanding Issues
Steve Van Shaar will not be on site after December 22. The City had not decided whether they want another person from Golder to be on-site after that.

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DATE: Tuesday, December 20, 2005	JOB NO: 033-1335-004
PROJECT: Moses Lake / Maintenance Facility Remedial Action	
LOCATION: Moses Lake, Washington	
CONTRACTOR: Anderson Environmental	OWNER: City of Moses Lake
WEATHER:	TEMP: ° at AM ° at PM
PRESENT AT SITE: Golder – Steve Van Shaar Anderson – Garret Hale City – Gerry McFaul, Tim Varney	

TO: City of Moses Lake – Gerry McFaul

ON SITE: **OFF SITE:**

THE FOLLOWING WAS NOTED:

Activities
Final grading of the subgrade in Excavation Area 2 was being done by subcontractor (Desert Rock). Placement of 4 inches of crushed surfacing based course was being placed as a finishing surface. Replacement of the north property line fence was being performed by subcontractor (Mag Construction); fenceposts were being installed.

Observations
The work proceeded in general accordance with the drawings, specifications, and Engineer's recommendations.

Sampling and Testing
There are three soil samples outstanding. No new samples were collected.

Coordination Meeting
The following items were noted at the coordination meeting:
1. The Contractor stated that the remaining contaminated soil stockpile would not be subject to a surcharge.
2. The City decided that no further compaction testing, i.e. testing of 4" crushed rock base course finishing layer, would be required.
3. The City decided that no Golder personnel would be required on-site after December 22. The Contractor expects to de-mobilize by December 30. The Engineer will prepare a Contractor's punch list for the City, who will perform the final walk-through with the Contractor.

Outstanding Issues
1. The Engineer will prepare a Contractor's punch list for the City.

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DATE: Wed, December 21, 2005	**JOB NO:** 033-1335-004
PROJECT: Moses Lake / Maintenance Facility Remedial Action	
LOCATION: Moses Lake, Washington	
CONTRACTOR: Anderson Environmental	**OWNER:** City of Moses Lake
WEATHER:	**TEMP:** ° at AM ° at PM
PRESENT AT SITE: Golder – Steve Van Shaar	
Anderson – Garret Hale	
City – Tim Varney	

TO: City of Moses Lake – Gerry McFaul

ON SITE: **OFF SITE:**

THE FOLLOWING WAS NOTED:

Activities
Desert Rock continued placement, grading, and compaction of the 4-inch finishing layer of crushed surfacing base course. The Contractor began installation of the interceptor drain tightline which will drain from the southwest corner of the maintenance shop to the north end of the maintenance shop (into an existing drain). A cleanout port and a sampling port were installed on the pipe at the southwest corner of the maintenance shop, including monuments.

Observations
The work proceeded in general accordance with the drawings, specifications, and Engineer's recommendations.

Sampling and Testing
Results were received from samples taken 12/19. The results indicated a level of contamination meeting the cleanup goals. Because all excavations have already been backfilled, it is expected that no further sampling and testing for contamination will be necessary for the remainder of the project.

Outstanding Issues
1. The Engineer will prepare a Contractor's punch list for the City. A draft was distributed for review by the City and the Contractor today. Final edits will be made tonight and the final list e-mailed to the City.

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Steven Van Shaar – Staff Engineer

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DATE: Wed, December 22, 2005	**JOB NO:** 033-1335-004
PROJECT: Moses Lake / Maintenance Facility Remedial Action	
LOCATION: Moses Lake, Washington	
CONTRACTOR: Anderson Environmental	**OWNER:** City of Moses Lake
WEATHER:	**TEMP:** ° at AM ° at PM
PRESENT AT SITE: Golder – Steve Van Shaar	
Anderson – Garret Hale	
City – Tim Varney	

TO: City of Moses Lake – Gerry McFaul

ON SITE: **OFF SITE:**

THE FOLLOWING WAS NOTED:

Activities
Desert Rock completed placement, grading, and compaction of the 4-inch finishing layer of crushed surfacing base course. They also regraded Penn Street where the water discharge line had crossed. Mag Construction continued installation of the north property line fence; they expected to finish before leaving tonight. The Contractor continued installation of the interceptor drain tightline.

Observations
The work proceeded in general accordance with the drawings, specifications, and Engineer's recommendations.

Issues and Resolutions
1. The Engineer delivered a copy of the Contractor's punch list to the City.

COPIES TO:

FIELD REPORT

SIGNED:

Steven Van Shaar – Staff Engineer

City of Wilsons Lake – [illegible] + Slip Creek

Field Notebook – Volume II → 9/28/2005 to Present

CONTENTS

PAGE | REFERENCE | DATE

AEC
Garret
Corey
Randy Chuck

Tim Varney (509) 766-9225

Ted Norton x. 2134

Baker Tank #1 (East) = # 1729 SD

Baker Tank #2 (center) = # FADW 47532

Baker Tank #3 (West) = # 1668 SD

Dave Puckett 253 405 8413
Holt Drilling

9/28/05

07:30 PWM on site
Observe that g.w. has filled EX-1 overnight, + stabalized at 3-4' below Maint. Bldg. footing foundation on east end (low-end).

Still flowing in on NE + SE sections, Product floating on east-half of pit.

07:45 Start pump (into BT-1)

Haul Trucks arrive – start filling from EX-2 (S-side).
Groundwater entering hole @ 4-ft bgs, (S-end of EX-2, just east of Baker Tanks).
Excavate to g.w. (~4'), + move west.

Sheen + Free Product collecting in pit on g.w. surface.
Strong petro. odors
@ 4' = Encounter cobbles, boulders, concrete rubble + trash, logs
Begin digging south towards City San. Sewer line (marked w/green) to delineate S-extent of petro impacts.

033-1335-004

Thin Layer of cement @ 3' deep,
sample dark sand above (2')
& gravelly silt below (4') EX-2-0928-D

Layer of asphalt @ 4' deep

PID + Collect Samples

11:15 2 Haul Trucks arrive

11:30 2 Truck loads of Quarry Spalls from Desert Rock Excavators
- Garret expecting rock,
has trucks dump loads next to EX-1.
- Garret begins moving Quarry Spalls into EX-1.

14:00 PVM collect soil confirmation samples,
EX-1-0928-F (8)
EX-1-0928-G (7),
from East-Central zone of bottom of EX-1.

15:00 PVM prep samples for shipment
to Wy'East Environmental Lab - Portland, OR

15:15 2 Haul Trucks arrive @ EX-2
PVM leave site to ship soil samples

15:25
PVM discuss site visits w/ Sandra (WDOE),
update Sandra on progress of excavation @ EX-1,
inform her that free petro. product
on water surface in open pit has been
dissapating / reducing with additional pumping.
Discuss PVM sending photos to
Sandra to show progress + minimize
need for site visits. Sandra agrees.
Sandra would like to see EX-1
before backfilling complete.
Sandra will attend Progress Meeting next Tues.
Garret upset that g.w. chem. data has NOT
been sent yet from Ted to Clean Concepts.

15:30 Ted Norton calls to clarify sample
ID's for water samples,
PVM inform that ~40 tons of
Quarry Spalls arrived at site.
Ted alarmed, since he had already
informed Gerry that Spalls are Unwarrented
at EX-1.
22-loads of Bottom Slop moved from EX-1 to EX-2.

17:00 Gerry leave message for PVM asking why
quarry spalls arrived at site?

17:15 PVM leave message for Gerry that
Garret had ordered + received spalls on site.

033-1335-004

PVM collect sidewall soil samples @ S-edge of EX-2:
EX-2-0928-A(
EX-2-0928-B(

PVM send selected soil samples to WyEast

9/29

0730 PVM on site.
2 Haul Trucks loading at EX-2.
2 loads of Quarry Spalls delivered at EX-1.
Garret trying to contact Gerry about authorization for Quarry Spalls.

0800 Continue digging EX-2 to west in front of Baker Tanks

As dig to clay @ 4' deep, encounter large slabs of concrete, logs, boulders above clay.
~~Stop, dig into clay - no go.~~
Groundwater yielding from bottom of pit as dig into clay.
Clay contains wetland plants, roots, & organic debris.
Strong reduced odor.

Oily sheen appearing on g.w. entering pit.
As sheen migrates through pit, free product accumulates on g.w. surface.

Abundant oily sheen + strong petroleum odors in EX-2 excavation.

09:30 Gerry calls PVM + asks why Garret ordered Quarry Spalls before getting written Permission. PVM explain to Gerry that discussion on Tues at Progress Meeting had indicated that Gerry + Tim in favor of using Quarry Spalls at EX-1.

Gerry remember differently Gerry thinking quarry spalls still unwarranted at EX-1

Gerry requests that ALL CHANGE ORDERS be presented in written form for approval.

10:30 Ted call PVM to ask if 2 more Baker Tanks are warranted. PVM says that NEED 2 more Baker Tanks if planning on using tanks for suspended sed. settling tank.

Garret concerned about Gordon not sending Clean Concepts water data to design Metals filter + get estimate to City.

11:30 Garret leave site - Corey take over as excavator operator.

PVM collect soil samples from EX-1, below footing foundation of South Wall of Maintenance Bldg.

~~EX-2 SWMB~~

PVM mark 5-foot intervals starting @ SE corner of Maintenance Bldg., + measuring to West along South Wall of Maintenance Bldg. (SWMB):

Dist. (ft.) from SE corner
Depth Sample collected (ft. below original grnd. surface)

EX-1-SWMB-40 (8)
EX-1-SWMB-45 (8)
EX-1-SWMB-50 (8)
EX-1-SWMB-55 (5)
EX-1-SWMB-60 (4)
EX-1-SWMB-65 (4)
EX-1-SWMB-70 (4)

033-1335-004

13:30 Continue ~~cutting~~ digging at SW corner of EX-2 (just to North of Baker Tanks).
Stockpile petro. impacted soil to N-side of excavation to load into haul trucks.
Plan to work excavation Northward towards Sweeper Pit.

@3-4' = Encounter large slabs of concrete, tires, trash, rubble.
As digging rubble out, g.w. begins flowing into pit at discrete, apparently isolated spots, both on sidewalls from behind disturbed rubble & from bottom of pit out of brownish clay below (gurgling upwards so fast, it creates small volcano in brown clay below rubble + petro. impacted soil's.)

@4' Strong Petroleum odors, black stain, heavy oily sheen, accumulation of free floating product on g.w. surface in open pit.

Reduced odor from clays @ 5' deep, root/plant remnants (appears to be native wetland deposits.) Black Stain, sheen,
Brownish to Yellow Brown clay @ 6' bgs, no staining, no sheen, reduced/boggy ~~odor~~ odor.

14:30 Begin draining Baker Tank #1 thru carbon filter & discharging into City Sanitary Sewer
Run Carbon Filter pump @ 35 gpm for ~4 hrs. (Discharge ~8500 gal from 20,000 gal. Tank)
~~Leave~~ Turn pumps OFF, & allow BT #1 to gravity drain from Tank thru Carbon Filter & into City Sewer @ ~20 gpm

16:00 Load 3-haul trucks from stockpile at EX-2

033-1335-004

16:30 Spread remaining Quarry Spalls on bottom of EX-1 while removing bottom slop w/ excavator & shuttling down to EX-2 @ w/ dozer to decant bottom slop before loading into haul trucks. (Otherwise, decants in haul truck, turns to concrete, & difficult to unload at dump).

While removing bottom slop @ EX-1, PVM isolates seep areas entering EX-1 from NE corner & SE corner, w/ bench of dry hardpan clay between.

- Observe No oily sheen on g.w. surface at NE seep (4' deep) adjacent to SE corner of Maintenance Bldg.

- Observe No g.w. seeping in above dry bench of clay.

- Observe heavy sheen on g.w. seep at SE corner (5-6' deep) of EX-1.

PVM discuss schedule & personnel changes at site for next week - bring engineer on to site to resolve engineering issues more quickly.

17:00 Continue stockpiling material in S-Central area of EX-2, anticipating 7-10 haul trucks to arrive tomorrow AM.

PVM analyze soil samples w/ PetroFlag:

(16:00 Gerry stop by & ~~discuss~~ ask PVM if Garrett had gotten written approval to charge 7.50/yd. to move EX-1 bottom slop to EX-2 w/ dozer? ~~PVM~~

PVM unaware of AEC charges.

PVM discuss logistical complications due to speeding-up schedule at start of field activities. Will plan to slow down, stay on set schedule, & stick to budget; i.e., MINIMIZE CHANGE ORDERS!

033-1335-004

9/30

7:30 PWL on site.
7 Haul Trucks running -
loading @ EX-2 stockpile.

Excavating along S-boundary moving towards east.

EX-1 = West end filled w/g.w. up to base of Footing.

EX-2 = west end filled w/g.w to 2.5' bgs.

~~B~~ B.T.-1 drained to outlet port @ 2' above bottom of tank.
Observe <6" sediment accumulation on bottom.

B.T.-2 full. Begin discharging BT-2 thru Carbon Filter + into City Sewer @ 35 gpm.

09:00 Pump g.w @ EX-2 into BT-1.

033-1335-004

10:00 After pumping EX-2 for 1-hr., w.l. @ ~4.5' bgs in west end of open pit;
BT-1 = 3/4 full.

3rd Baker Tank arrives at site. Observe inside to be rusty w/ blobs of tar on sides, petroleum odors.
Rinse w/ Sweeper Pit Hydrant water, collect sample to analyze for Σ Metals + Arsenic

Tim discusses w/ PVM the history of site - including legal + illegal dumping, filling of wetland area, installation of subsurface drain pipe.

12:00 PVM continue to collect confirmation samples along South Wall of Maintenance Bldg. (SWMB) beneath footing on East end of bldg. (measuring from SE corner of Maint. Bldg.):
EX-1-SWMB-1(4)
EX-1-SWMB-5(4)
EX-1-SWMB-10(4)
EX-1-SWMB-15(5)
EX-1-SWMB-20(5)
EX-1-SWMB-25(5)
EX-1-SWMB-30(6)
EX-1-SWMB-35(6)
↑ Depth (ft.) below original grnd. surface

14:00 Collect confirm. samples from EX-2 (using N-E grid sampling notation):
EX-2-
EX-2
EX-2

033-1335-004

15:00 BT-2 pumping through Carbon Filter @ 35 gpm, discharging into City Sanitary Sewer.
After BT-2 pumped empty to ~3 ft. above bottom of tank.
Set-up BT-1 to gravity drain thru Carbon Filter & discharge into Sewer @ ~15 gpm over weekend.

033-1335-004

10/3/05

9:00 PVM at site. Both Baker Tanks empty. 9 Haul Trunks running, loading at EX-2

EX-1 pit filled with water from infiltration + heavy rains all weekend, water level ~ 1.5' above bottom of bldg. footing (~ 1 ft. bgs on west end).

EX-2 water level in west end of pit ~ 2.5 ft bgs, w.l. stabilized over weekend.

PVM begin pumping EX-2 into BT-1.
Pump for 1-hr.

10/3/05

10:30 Weekly Progress Meeting

Sandra
Tim, Gerry
Steve Andersen
PVM, Steven VanShaar

① Is EX-1 ready to backfill
- need to chase SE corner
- Interceptor Drain Pipe
  - Design w/ dead-end (dry well?) + decide what to hook to later
  - O/W Sep. is currently hooked to Storm Sewer, should be hooked to Sanitary Sewer (in future, will be changed)

(lay pipe + construct Drain + place CDF on Monday Morn.)
- 1 ft. perf. pipe driven under bldg. for drain.
- Need gas re-connected at Maint. Bldg. by Wed. 10/12.

② EX-2
- excavate to + around Sweep Pit (until finished w/ EX-1.)
- do not dig too close to road / sewer line to compromise sewer / hill slope.
- State does NOT require removal of bldg. or road to remove contamination

③ Baker Tank rotation
- filling 2 during day, empty 1 @ day, empty 1 @ night.
- Keep rotation + 3 will work.

④ Soil Sample Turn-around
- 24 hr. is ok

⑤ Need estimate for Sept. by end of day.

⑥ ~~Stay on Block St~~ haul route specified in Contract - don't use Block St!!

⑦ Perf. Pipe at EX-2
- need to replace in simple way
- Gerry thinks 25^{00}/ft is too high.
- Steve A. thinks can be done cheaper.

(Sch 40 pipe @ EX-1 for ⑧ (interceptor drain)).

033-1335-004

Mon 10/3/05 Moses Lake
@ On-site 1000 Off-site 1730

Water samples
Amber ½ L x2 for diesel (DX)
ESS HCl Pre-preserved x3 for (G/BTEX)
Vials (gas + volatiles)
No headspace
from GAC effluent 1 x wk
Poly ½ L Nitric x1 for metals

Soil samples (1 every ~50 on grid) EX2-25N-50E-7 ← depth
4 oz glass — Diesel (DX)
Wy. East methanol glass (pre-weighed)

9194

Conversations
Randy: this is muckiest job he's been on
Typical procedure is spalls (bigger is better) w/ fabric on top
Only other equipment to move is heavy vibratory roller
Discussed possibilities for backfill briefly
- spalls + fabric
- concrete/kiln dust (probably too wet)
- try backfilling starting in shallow end

Tues 10/4/05 Moses Lake

On-site 0900 Off-site 1545

1700 1800

Attended Mtg

Observed ex + haul

Reviewed draft contractor invoice

Metals previously tested for Cd, Cr, Hg, Ag, Cu, Pb, Zn, As

Conversations

Discussed trying to use native backfill w/ Steve A. Agreed no harm in trying it

Discussed interceptor pipe w/ Steve A, Cory + Tim Kenney. Slab @ SW corner of building will be removed. Tim does not think it will need to be replaced. Tim did suggest a 4'x4' concrete pad outside of adjacent door

(1234)

206-321-6186 111

10/5/05

EX-2-50N-10W-7B
EX-2-50N-40W-6B
EX-2-50N-60W-7B

EX-2-120N-50E-6B

PID

~~22.8~~ 32
194
~~4~~ 29.6

14:00
14:10
14:20
15:30

033-1335-004

Wed 10/5/05 Moses Lake

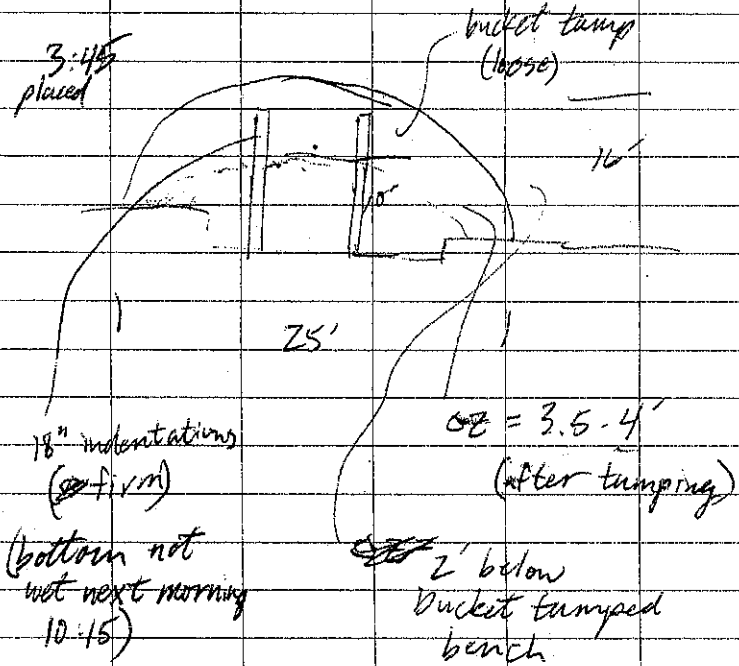
On-site 0900 Off-site @1800

Running 3 trucks – hope to get 2 more

Cat 320C

Conversations

Gerry wants to approve contractor's invoice as submitted, except sales tax to be added. I will write memo re: what adjustments will need to be made on next invoice



Thurs 10/6/05 Moses Lake
On site 1000

Tanks not empty
pump (out of 8 GAC) operating at 20 gpm
Adjusted as crew knew how to 23 gpm

Conversations
Re: water testing, Gerry said metals suite 8 was for city (1 time).
Arsenic is still required weekly by the State.

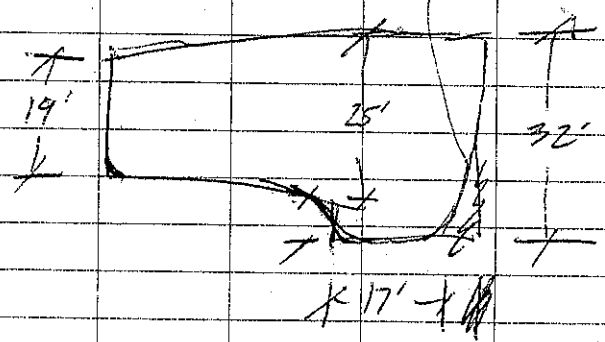
40

Fri 10/7/05

41

Ex. Area 1

Sidewalk pavement



Golder Associates
18300 NE Union Hill Road, Suite 200
Redmond, WA USA 98052-3333
Tel: (425) 883-0777
Fax: (425) 882-5498

DATE: Monday, October 10, 2005	JOB NO: 033-1335-004
PROJECT: Moses Lake / Maintenance Facility Remedial Action	
LOCATION: Moses Lake, Washington	
CONTRACTOR: Anderson Environmental	OWNER: City of Moses Lake
WEATHER:	TEMP: ° at AM ° at PM
PRESENT AT SITE: Golder – Steve Van Shaar	
Anderson – Garret Hale	
City – Tim Varney	

TO: City of Moses Lake – Gerry McFaul

ON SITE: 0730 **OFF SITE:** 1830

THE FOLLOWING WAS NOTED:

Activities
Anderson continued excavation and export of contaminated soils in Excavation Area 2. Because of water in the excavation, the contaminated soil was not completely removed in some areas; in these areas, partial excavation was performed. The excavation reached the edge of the sweeper pit and hydrant pad.

Observations
Excavation and export was carried out in accordance with the drawings and specifications.

Sampling and testing
Five soil samples were collected from Excavation Area 2.
Preliminary results were received for samples collected on 10/3, 10/4, and 10/5.
Upon reviewing all the analytical results, I discovered that in two cases, samples with the same name appeared on two separate reports. Upon contacting Paul VanMiddlesworth (Golder), I discovered that the samples appearing in the first report had not been properly preserved, and the results should be disregarded.
Based on the results (and pursuant to installation of the interceptor drain), Excavation Area 1 may be backfilled.

Issues and resolutions
1. No pumping of water from the excavation had occurred over the weekend, and the excavation had approximately 80,000 gallons of water inside. Two tanks were empty at the beginning of the day, but were quickly filled. The discharge pump from the tanks to the sewer was running at approximately 20 gpm, instead of the 35 gpm allowed; this had been the case on Thursday and Friday as well. The Contractor requested that a 4th tank be brought on-site, and that the allowable discharge rate be increased from 35 gpm to 50 gpm. Gerry McFaul (City Engineer) approved a one-time increase in the discharge rate to 50 gpm to allow the Contractor to "catch up" with the water; after catch-up is achieved, it is expected that the Contractor will provide means to drain the excavation without exceeding the 35-gpm limit. The proposal for a 4th tank was rejected by the Engineer on the following grounds: a) three tanks can be drained at 35 gpm in approximately 24 hours, the proposed 4th tank would provide approximately 20,000 gallons of extra storage for one time only; after that one time, it would serve only to increase the settlement time for the water; b) the temporary increase in discharge rate should eliminate any need for extra storage, i.e. the Engineer believes that inflow of groundwater to the excavation is less than 35 gpm; c) no complaints have been raised by the City or State regarding excessive turbidity of discharge water. The pump was repaired and set at 35 gpm for the remainder of the day. The Contractor anticipates increasing to 50 gpm tomorrow (there was concern that the available wiring would not support the pump at this flow; however, the wiring was improved this afternoon).
2. The Contractor requested further direction regarding backfill materials. A small-scale test of using the City Stockpile material as backfill had been conducted on Wednesday, October 5. At that time, pumping was observed, but support of the excavator was achieved. The filled area was also in good condition the following day, and appeared to be in good condition on Friday as well, despite high groundwater conditions due to low discharge of water from the tanks. The Engineer believed that the material would be suitable for use where large settlement could be tolerated (most areas of Excavation Area 2). However, with prolonged exposure to groundwater, the fill had "wicked" moisture from beneath and had become loose and unstable by this morning. The Contractor and Engineer agreed that an alternative material would have to be used on the bottom of the

excavation, and the City Stockpile material could be used on top of the alternative material. Based on the size of the stockpile, the size of the excavation, and the location of groundwater, it is estimated that the City Stockpile material will be completely used up. For alternate material, three possibilities were considered as follows:

a. Import material already in the contract. The material is a dark gray, well-graded fine sand to fine gravel, manufactured by crushing and screening. Based on manual observation, the material has less than 5% fines. The material should compact and drain suitably, provided that geotextile is used beneath the fill to provide separation. This option was approved by the Engineer for use. Approximately 1,000 tons have been ordered.
b. River rock. This material consists of rounded cobbles from 2 to 8 inches in diameter, separated from finer and coarser material by screening. The Contractor has not used such a material in a similar application. There was concern that the shape of the particles could make it difficult to spread and compact. A unit price has not been presented by the Contractor. This option was rejected by the Engineer, but may be considered again in the future.
c. Quarry spalls. The material consists of angular crushed rock varying in size from 2 to 8 inches across, separated from finer and coarser material by screening. The material should function well, provided that geotextile is used on top of the quarry spalls to provide separation. A unit price has previously been agreed upon. However, if the quantity required is large, a better price may be negotiable. Once a quantity is estimated by the Contractor, along with a revised unit cost (if applicable), the material will be considered for approval by the Engineer.

3. The Engineer raised the issue that the Construction Specifications call for testing of all imported material for contamination. Because of the crushed nature and coarseness of the materials, the testing has been waived by the Engineer.
4. The Engineer received a proposed Change Order from the Contractor for a unit cost for furnishing and installing geotextile in association with backfilling. The exact material was unknown at the time, but based on known properties, it appears to be Typar 3401. Typar 3401 was approved by the Engineer.

Outstanding Issues

The Owner has requested a formal letter describing the deficiencies of the Contractor's September invoice (which was approved by the Engineer as it was submitted in order to expedite payment) and the associated adjustments that should be made to the October invoice.

COPIES TO: _____

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FIELD REPORT

SIGNED: _____

Steven Van Shaar – Staff Engineer

1/26/06

12:00 PVM arrive at site
Dave (Holt Drilling) calls + says will be ~2 hr. late (delayed finding replacement helper).

2:30 Drillers arrive at site
Set-up on MW-19 boring
Tailgate H+S Meeting

3:45 TD hole MW-19 @ 14.5'

Begin building well MW-19

5:00 Well complete - surface seal

Tim Varney says Impound Lot closed for day, so cannot access MW-18 for abandonment

Tim will keep gate open for us to get out tonight.

1/27/06

08:00 MW-19 SWL = 3.5' BTOC

Construct pad @ MW-15 w/ new monument (flush)

8:30 Abandon MW-18 ~ 1/2 bag bentonite

Drillers get 1-Ton truck stuck in soft spot of excavation area.

Call Moses Lake Towing to pull out.

11:00 PVM off-site

033-1335-004

2/2/06

9:30 Arrive at Site to collect g.w. samples

Calibrate Meters:

Cond. Std. (SEA0461) = 338 µS @ 10.7° (Std. = 354 @ 15°)

pH Meter (SEA0424) → slp = 86.8 @ 11.9° w/ pH 4, 7, 10 buffers

Turbidity Meter → 5.26 std. = 5.29 NTU
58.4 std = 60.2

9:40 Pump MW-19 w/ ES-60 Submersible Pump @ 1gpm - 1.5 gpm

11:10 Collect sample MW19-020206

PVC pipe too narrow + gritty for ES-60 to fit to water

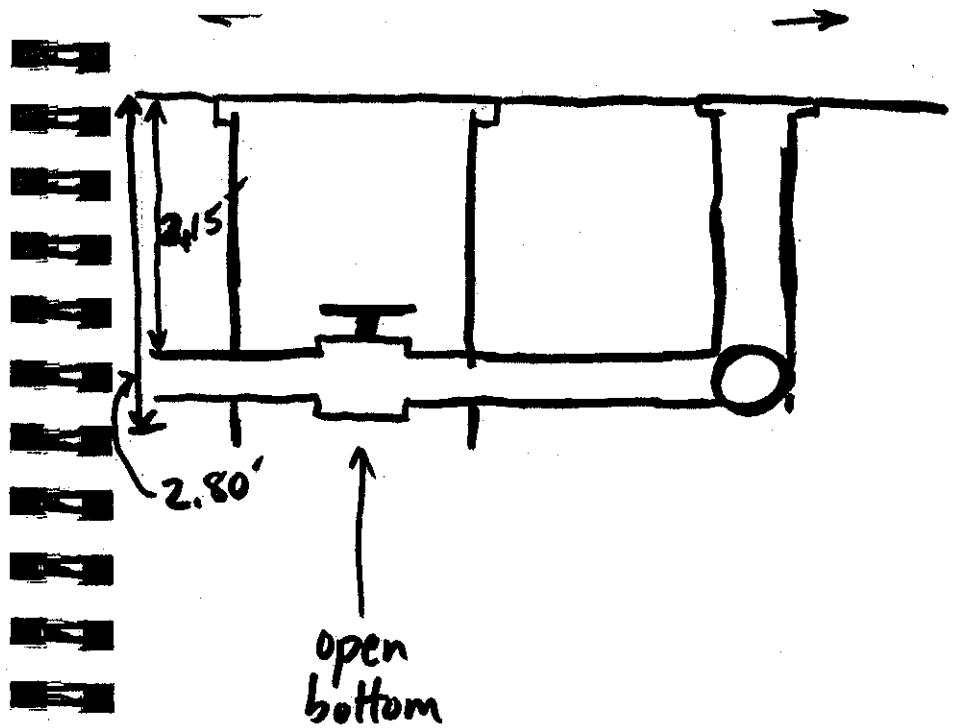
Use peristaltic pump.

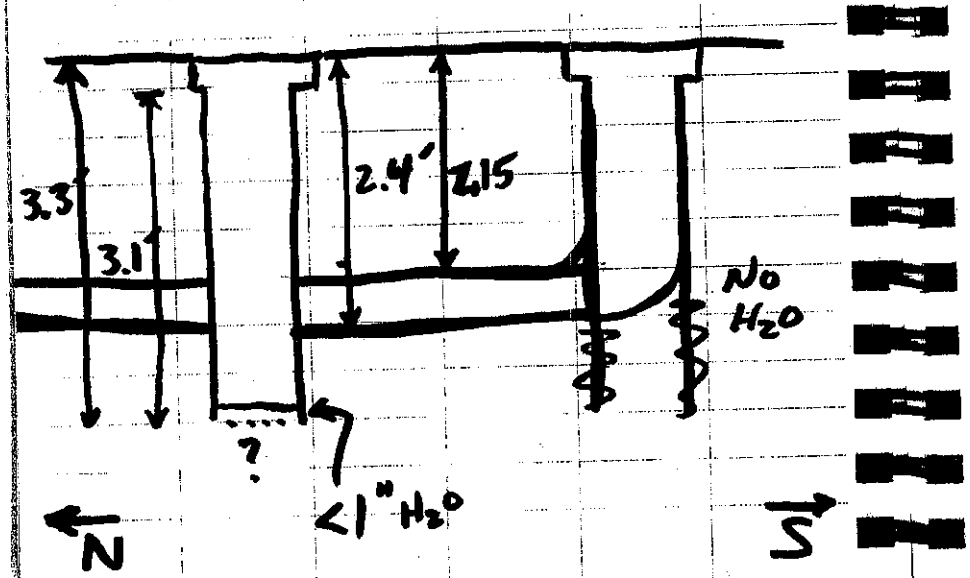
14:15 Collect sample MW15-020206 + MS/MSD

14:38 Pump MW-17 @ 0.5 gpm using peristaltic pump

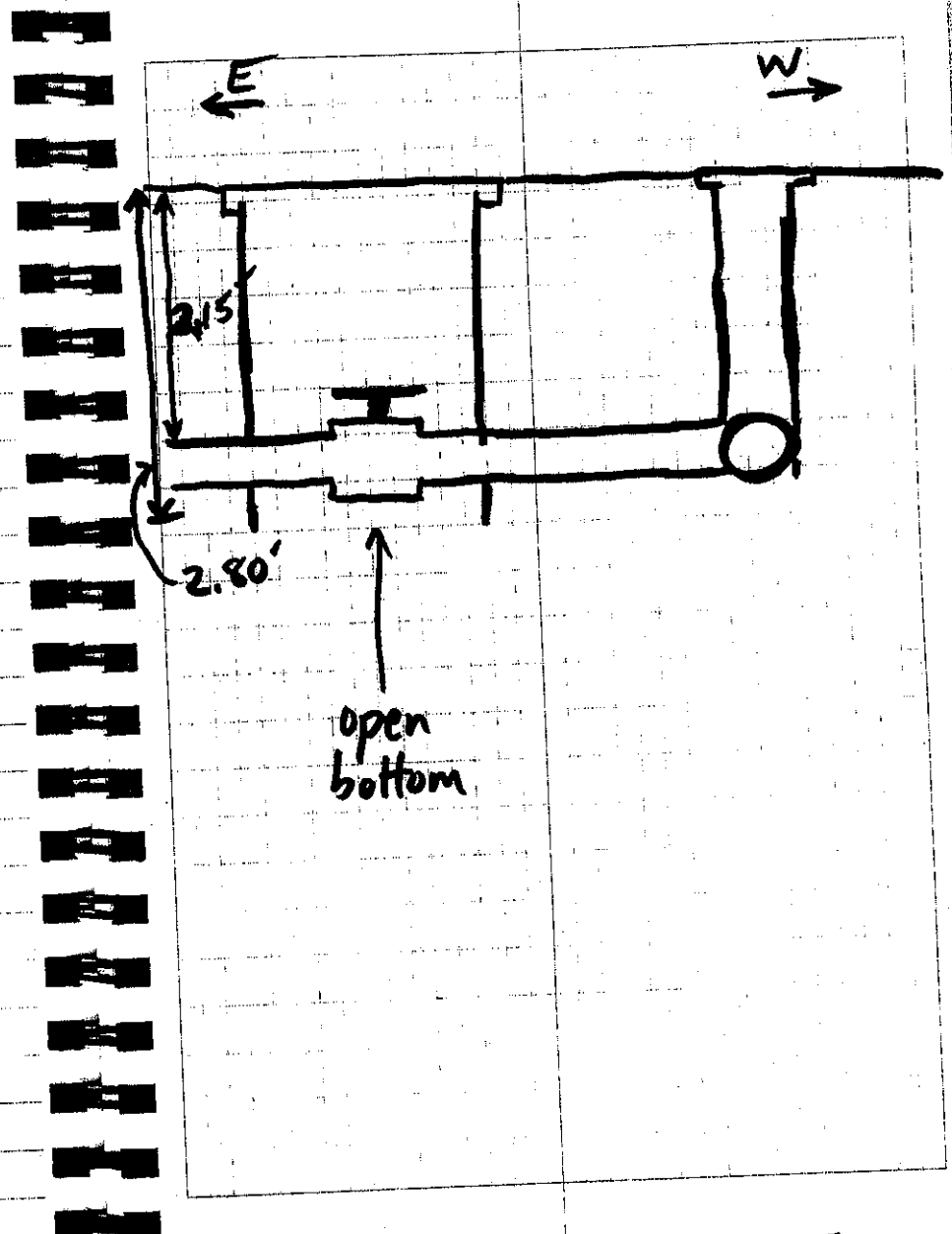
16:18 Collect sample MW17-020206 & Dup. (MW171-020206)

16:45 Collect Equipment Blank.





033-1335-004



033-1335-004

Golder Associates
18300 NE Union Hill Road, Suite 200
Redmond, WA USA 98052-3333
Tel: (425) 883-0777
Fax: (425) 882-5498

TO: City of Moses Lake – Gerry McFaul

DATE: Tuesday, October 11, 2005	JOB NO: 033-1335-004
PROJECT: Moses Lake / Maintenance Facility Remedial Action	
LOCATION: Moses Lake, Washington	
CONTRACTOR: Anderson Environmental	OWNER: City of Moses Lake
WEATHER:	TEMP: ° at AM ° at PM
PRESENT AT SITE: Golder – Steve Van Shaar	
Anderson – Garret Hale	
City – Tim Varney	

ON SITE: 0800 **OFF SITE:** 1700

THE FOLLOWING WAS NOTED:

Activities
Anderson continued excavation and export of contaminated soils in Excavation Area 2. A dozer was brought on site for spreading backfill. Backfilling with import sand lain over geotextile began in the southeast portion of the excavation. Discharge of water to the sewer proceeded at 50 gpm. Some City Stockpile material was moved and stockpiled adjacent to Excavation Area 1.

Observations
An abandoned dry well was encountered at the southwest corner of the sweeper pit. Excavation and export was carried out in accordance with the drawings and specifications. Backfill was placed in accordance with the recommendations of the Engineer. The backfilling procedure consists of placement of geotextile, then using the dozer to spread 24 inches of the sand. The thickness of the sand was increased to as much as 4 feet in 24 inch un-compacted lifts. The weight of the dozer plus the material pushes the loose subgrade and water toward the sump. The contractor plans on scraping some of the material off the top (of the import) as filling continues and the material becomes firmer with time.

Sampling and testing
Two soil samples were collected from Excavation Area 2.
Final results were received for samples collected on 10/3 and 10/4.
Preliminary results were received for samples collected on 10/6 and 10/7.

Issues and resolutions
The Contractor requested permission to exceed the contract quantity for asphalt pavement. The Engineer approved the request provided that the asphalt be removed (and replaced) on an as needed basis to meet cleanup goals, i.e. asphalt would be excavated and disposed of with the contaminated soils that lie beneath.
The Engineer approved a change order for using Typar 3401-G at $543.70 per roll for separation/stabilization of subgrade.

Outstanding Issues
1. The Contractor connected all three tanks to the intake of the carbon filter prior to leaving last night. This morning, approximately 40,000 gallons had drained at 35 gpm. The Contractor adjusted the flow to the sewer to 50 gpm upon arrival at the site this morning. The excavation was pumped until the tanks were filled by 9:30. The excavation still contains standing water. The Contractor expressed continued concern and wanted to bring a 4th tank on-site, considering discharge to an unknown alternate to the sewer (hauling off-site). The Contractor currently does not plan on pumping the excavation over the weekend. The Engineer expressed concern that the excavation would fill up and delay the work next week. The Contractor and Engineer agreed to resolve the issue later in the week, upon observation of pumping and the effect of backfilling.

2. The Owner has requested a formal letter describing the deficiencies of the Contractor's September invoice (which was approved by the Engineer as it was submitted in order to expedite payment) and the associated adjustments that should be made to the October invoice.

COPIES TO: _____

_____

_____

FIELD REPORT

SIGNED: _____

Steven Van Shaar – Staff Engineer

Golder Associates
18300 NE Union Hill Road, Suite 200
Redmond, WA USA 98052-3333
Tel: (425) 883-0777
Fax: (425) 882-5498

TO: City of Moses Lake – Gerry McFaul

DATE: Wednesday, October 12, 2005	**JOB NO:** 033-1335-004
PROJECT: Moses Lake / Maintenance Facility Remedial Action	
LOCATION: Moses Lake, Washington	
CONTRACTOR: Anderson Environmental	**OWNER:** City of Moses Lake
WEATHER:	**TEMP:** ° at AM ° at PM
PRESENT AT SITE: Golder – Steve Van Shaar	
Anderson – Garret Hale	
City – Tim Varney, Gerry McFaul	
Ecology – Sandra Treccani	

ON SITE: 0730 **OFF SITE:** 1730

THE FOLLOWING WAS NOTED:

Activities
Anderson continued excavation and export of contaminated soils in Excavation Area 2. Backfilling with import sand lain over geotextile continued in the southeast portion of the excavation. Discharge of water to the sewer proceeded at 35 gpm, but carbon filter appeared to be clogging, so actual pumping rate was erratic. Replacement (acid-washed) carbon has been ordered by the Contractor and is expected to arrive tomorrow afternoon.

Observations
Excavation and export was carried out in accordance with the drawings and specifications. Backfill was placed in accordance with the recommendations of the Engineer. The backfilling procedure consists of placement of geotextile, then using the dozer to spread 24 inches of the sand. The thickness of the sand was increased to as much as 4 feet in 24-inch un-compacted lifts. The weight of the dozer plus the material pushes the loose subgrade and water toward the sump. The contractor plans on scraping some of the material off the top (of the import) as filling continues and the material becomes firmer with time. Vibratory rolling will be attempted and observed at that time.

Sampling and testing
Five sets of soil samples were collected from Excavation Area 2.
One water sample were collected from the effluent discharging to the sewer.

Coordination meeting
The following items were noted in the weekly coordination meeting:
1. When the hydrant and associated water line are replaced, the City would like to have their inspector present for testing.
2. The slab at the southwest corner of the maintenance shop will be removed during installation of the interceptor drain, and will not be replaced. Instead, a 4 ft x 4 ft slab will be poured in front of the man door near the existing slab (currently there is no slab at the man door).
3. Top course at Excavation Area 2 will be 4 inches thick.
4. Alternatives for discharge of treated water were discussed as noted below.

Issues and resolutions
The Contractor requested direction from the Engineer regarding the requirements for replacement carbon. The Engineer recommended that the Contractor order acid-washed carbon in order to avoid possible arsenic (or other metal) contamination.

Outstanding Issues
1. Currently, the allowable discharge rate of 35 gpm to the sewer does not appear to be sufficient to remove all the water from Excavation Area 2 and keep it dry. The Department of Ecology has discouraged the option of additional discharge to the sanitary sewer or discharge to the storm drain. However, they have verbally approved the discharge of treated water in any manner where the water would infiltrate through soil, such as dust control, moisture conditioning of fill, spraying on fields, pumping to infiltration basins, etc. Other options

identified include additional on-site storage (additional tanks), and backfilling of the excavation as much as possible. The Contractor and Engineer agreed to wait and observe the effect of backfilling before any other action is taken. It is anticipated that by the end of the day Thursday, more than half of the excavation will be filled to a level above the level of inflowing groundwater.

2. Total weight of exported soils (entire project) is 9630 tons. The Contractor requested written permission to continue export beyond the quantity shown in the Contract Documents (9500 tons). It is estimated that 2000 to 3000 additional tons of material may still need to be disposed of to reach project cleanup goals.
3. The Contractor submitted mix designs for controlled-density fill and concrete to the Engineer for approval.
4. The Owner has requested a formal letter describing the deficiencies of the Contractor's September invoice (which was approved by the Engineer as it was submitted in order to expedite payment) and the associated adjustments that should be made to the October invoice.

COPIES TO: _____

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FIELD REPORT

SIGNED: _____

Steven Van Shaar – Staff Engineer

Golder Associates
18300 NE Union Hill Road, Suite 200
Redmond, WA USA 98052-3333
Tel: (425) 883-0777
Fax: (425) 882-5498

DATE: Thursday, October 13, 2005	JOB NO: 033-1335-004
PROJECT: Moses Lake / Maintenance Facility Remedial Action	
LOCATION: Moses Lake, Washington	
CONTRACTOR: Anderson Environmental	OWNER: City of Moses Lake
WEATHER:	TEMP: ° at AM ° at PM
PRESENT AT SITE: Golder – Steve Van Shaar	
Anderson – Garret Hale	
Western Pacific – Nathan	

TO: City of Moses Lake – Gerry McFaul

ON SITE: 0900 OFF SITE: 1830

THE FOLLOWING WAS NOTED:

Activities
Backfilling with import sand lain over geotextile continued in the east portion of Excavation Area 2. Replacement (acid-washed) carbon arrived and was installed. Excavation Area 1 was pumped dry. The interceptor drain was installed, except for the ball valve and accessway, which will be installed later. Backfilling of Excavation Area 1 proceeded without compaction. Enough fill was placed to be used as a form for controlled-density fill (CDF) which is required adjacent to the maintenance shop. The CDF was placed.

Observations
Backfill was placed in accordance with the drawings and specifications and the recommendations of the Engineer. The backfilling procedure for Excavation Area 2 consists of placement of geotextile, then using the dozer to spread 24 inches of the sand. The thickness of the sand was increased to as much as 4 feet in 24-inch un-compacted lifts. The weight of the dozer plus the material pushes the loose subgrade and water toward the sump. The contractor plans on scraping some of the material off the top (of the import) as filling continues and the material becomes firmer with time. Vibratory rolling will be attempted and observed at that time. Backfilling of Excavation Area 1 proceeded by placing geotextile over the quarry spalls (previously placed). Imported sand was then placed in 12-inch static rolled lifts until the height of the fill was higher than the elevation of seepage into the excavation. City Stockpile material was then placed on top of the imported material in 12-inch lifts and compacted with a vibratory sheepsfoot roller.
Installation of the interceptor drain was in accordance with the plans and recommendations of the Engineer. The drain pipe consisted of 4 inch PVC with transverse slots spaced at approximately ¼ inch. Drain rock consisted of 7/8-inch rounded rock.
Placement of CDF was in accordance with the drawings and specifications.

Sampling and testing
Preliminary results were received for samples collected 10/10 and 10/11.
The minimally compacted material in both excavations was tested by Western Pacific, finding that the material had been compacted from 85 to 90 percent of maximum dry density. The moisture content of the imported material was well below optimum (5% vs. 12%)

Issues and resolutions
The Engineer approved a change order for $345 per filter (in addition to the contract amount) to change the carbon filter material using acid-washed carbon.

Outstanding Issues
1. Results of soil testing indicate that the existing sweeper pit may not be required to be removed. More testing on the other edges of the pit will be carried out.
2. Currently, the allowable discharge rate of 35 gpm to the sewer does not appear to be sufficient to remove all the water from Excavation Area 2 and keep it dry. The Department of Ecology (Ecology) has discouraged the option of additional discharge to the sanitary sewer or discharge to the storm drain. However, they have verbally approved the discharge of treated water in any manner where the water would infiltrate through soil,

such as dust control, moisture conditioning of fill, spraying on fields, pumping to infiltration basins, etc. Ecology has also approved discharge to the adjacent wetlands, provided no erosion is caused and the effluent is treated as for discharge to the sewer. Other options identified include additional on-site storage (additional tanks), and backfilling of the excavation as much as possible. Ecology has recommended that up to 40,000 gallons per day be discharged to the sewer, and anything beyond that be discharged in some other manner. The Contractor and Engineer agreed to wait and observe the effect of backfilling before any other action is taken. Approximately half of the excavation is filled to a level above the level of inflowing groundwater.

3. Total weight of exported soils (entire project) is 9630 tons. The Contractor requested written permission to continue export beyond the quantity shown in the Contract Documents (9500 tons). It is estimated that 2000 to 3000 additional tons of material may still need to be disposed of to reach project cleanup goals.
4. The Contractor-submitted mix designs for concrete need to be reviewed by the Engineer.
5. The Owner has requested a formal letter describing the deficiencies of the Contractor's September invoice (which was approved by the Engineer as it was submitted in order to expedite payment) and the associated adjustments that should be made to the October invoice.

COPIES TO: _____

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FIELD REPORT

SIGNED: _____

Steven Van Shaar – Staff Engineer

Golder Associates
18300 NE Union Hill Road, Suite 200
Redmond, WA USA 98052-3333
Tel: (425) 883-0777
Fax: (425) 882-5498

TO: City of Moses Lake – Gerry McFaul

DATE: Friday, October 14, 2005	JOB NO: 033-1335-004
PROJECT: Moses Lake / Maintenance Facility Remedial Action	
LOCATION: Moses Lake, Washington	
CONTRACTOR: Anderson Environmental	OWNER: City of Moses Lake
WEATHER:	TEMP: ° at AM ° at PM
PRESENT AT SITE: Golder – Steve Van Shaar	
Anderson – Garret Hale	
Western Pacific – Nathan	

ON SITE: 0900 **OFF SITE:** 1830

THE FOLLOWING WAS NOTED:

Activities
Backfill was placed in both excavation areas.

Observations
Backfill was placed in accordance with the drawings and specifications and the recommendations of the Engineer.
Excavation Area 1 was backfilled in 12-inch lifts and compacted using a vibratory sheepsfoot roller.
Excavation Area 2 was backfilled using imported material. The upper 2 feet of material was scraped off of areas that had been backfilled previously. Geotextile was used between the soft native subgrade and the fill material. The geotextile was held in place by dumping fill on them using an excavator. Additional material was spread using a dozer. The material was track-walked in 24-inch lifts. A portion of the imported fill was compacted with a vibratory sheepsfoot roller. Pumping was observed (approximately 3 inches of vertical rebound) during rolling. The remainder of the fill was compacted by track-walking and static rolling.

Sampling and testing
Final results were received for samples collected 10/10, 10/11, and 10/12 (Wy East reports 57988 and 58009).
The compacted material in both excavations was tested by Western Pacific, finding that the material had been compacted to at least 90 percent (95 percent beneath replacement wash rack) of maximum dry density.

Outstanding Issues
1. Results of soil testing indicate that the existing sweeper pit may not be required to be removed. More testing on the other edges of the pit will be carried out. Contractor currently has valve, hydrant, and catch basin on-site. Integrity of water line serving hydrant has also been compromised. These considerations may cause replacement of the hydrant system although there may not be contaminated soil beneath.
2. Currently, the allowable discharge rate of 35 gpm to the sewer does not appear to be sufficient to remove all the water from Excavation Area 2 and keep it dry. The Department of Ecology (Ecology) has discouraged the option of additional discharge to the sanitary sewer or discharge to the storm drain. However, they have verbally approved the discharge of treated water in any manner where the water would infiltrate through soil, such as dust control, moisture conditioning of fill, spraying on fields, pumping to infiltration basins, etc. Ecology has also approved discharge to the adjacent wetlands, provided no erosion is caused and the effluent is treated as for discharge to the sewer. Other options identified include additional on-site storage (additional tanks), and backfilling of the excavation as much as possible. Ecology has recommended that up to 40,000 gallons per day be discharged to the sewer, and anything beyond that be discharged in some other manner. The Contractor and Engineer agreed to wait and observe the effect of backfilling before any other action is taken. Approximately half of the excavation is filled to a level above the level of inflowing groundwater
3. Total weight of exported soils (entire project) is 9630 tons. The Contractor requested written permission to continue export beyond the quantity shown in the Contract Documents (9500 tons). It is estimated that 2000 to 3000 additional tons of material may still need to be disposed of to reach project cleanup goals.

4. The Owner has requested a formal letter describing the deficiencies of the Contractor's September invoice (which was approved by the Engineer as it was submitted in order to expedite payment) and the associated adjustments that should be made to the October invoice.

COPIES TO: _____

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FIELD REPORT

SIGNED: _____

Steven Van Shaar – Staff Engineer

Golder Associates
18300 NE Union Hill Road, Suite 200
Redmond, WA USA 98052-3333
Tel: (425) 883-0777
Fax: (425) 882-5498

DATE: Monday, October 17, 2005	JOB NO: 033-1335-004
PROJECT: Moses Lake / Maintenance Facility Remedial Action	
LOCATION: Moses Lake, Washington	
CONTRACTOR: Anderson Environmental	OWNER: City of Moses Lake
WEATHER:	TEMP: ° at AM ° at PM
PRESENT AT SITE: Golder – Steve Van Shaar, Paul VanMiddlesworth	
Anderson – Garret Hale	
Western Pacific – Rick	
City – Tim Varney, Gerry McFaul	

TO: City of Moses Lake – Gerry McFaul

ON SITE: 0815 **OFF SITE:** 1900

THE FOLLOWING WAS NOTED:

Activities
Backfill was placed in the eastern portion of Excavation Area 1. The drain line and catch basin for the wash rack were installed. Backfill was placed on top of previously placed backfill in Excavation Area 2.

Observations
Backfill was placed in accordance with the drawings and specifications and the recommendations of the Engineer. Excavation Area 1 was backfilled in 12-inch lifts and compacted using a vibratory sheepsfoot roller. City Stockpile material was used for backfilling in Excavation Area 2. One lift of 18 to 24 inches was placed on top of previously placed import backfill using a dozer and front end loader. The backfill was compacted using a vibratory sheepsfoot roller.
Installation of the drain and catch basin for the wash rack was in accordance with the drawings and specifications. The drain line was left disconnected at the edge of the shop building. It will be connected later.

Sampling and testing
Water samples were taken from two monitoring wells, from the effluent from the recently installed carbon filter, and directly from Excavation 1 (4 samples total).
The fill material in Excavation Area 1 was tested by Western Pacific, finding that the material had been compacted to at least 90 percent of maximum dry density.

Issues and resolutions
The Contractor proposed a change in the final slope of the wash rack from 1% to 2%. The proposal was accepted by the Engineer.
The Contractor requested clarification on final grading at the City Stockpile location. The Engineer (Steve VanShaar), the City (Tim Varney), and the Contractor (Garret Hale) discussed the intent. Tim agreed to examine and give direction periodically as movement of the stockpile proceeds.

Outstanding Issues
1. Upon arrival at the site this morning, an artesian groundwater condition was observed at the western portion of Excavation Area 1, which had been filled to grade on Friday. The water had run across the site and along Penn Street. The drain pipe for the wash rack (which had been temporarily capped during backfilling) was opened to contain the flow. A permanent solution still needs to be found, because the drain will have to be tightlined to the wash rack catch basin. Installation of a french drain at the toe of the slope between the two halves of the excavation area has been proposed by the Engineer, but a suitable discharge pipe needs to be verified prior to installation. This condition also precludes installation of the ball valve and accessway for the interceptor drain.
2. A 4-foot by 4-foot slab outside of an existing man-door at Excavation Area 1 has been proposed by the Owner. The Contractor requested that the Engineer check that the proposed size meets code.
3. Results of soil testing indicate that the existing sweeper pit may not be required to be removed. More testing on the other edges of the pit will be carried out. Contractor currently has valve, hydrant, and catch basin on-site. Integrity of water line serving hydrant has also been compromised. These considerations may cause replacement of the hydrant system although there may not be contaminated soil beneath.

4. Currently, the allowable discharge rate of 35 gpm to the sewer does not appear to be sufficient to remove all the water from Excavation Area 2 and keep it dry. The Contractor has proposed that a second carbon filter and pump be used to pump to the wetlands at 60 gpm while the existing system continues to pump to the sewer at 35 gpm. The Engineer is not convinced that this is the most cost effective way to handle discharge. However, the existing system may be re-routed to discharge at 60 gpm to the wetlands. Other proposals for handling the water include obtaining more tanks for temporary storage and pump the excavation in 1 to 3 discrete events, rather than continuously; or filling the excavation without pumping all the water out. The technical and economic aspects of these and possibly other options will be discussed at the coordination meeting tomorrow.
5. Total weight of exported soils (entire project) is 9630 tons. The Contractor requested written permission to continue export beyond the quantity shown in the Contract Documents (9500 tons). It is estimated that 2000 to 3000 additional tons of material may still need to be disposed of to reach project cleanup goals.
6. The Owner has requested a formal letter describing the deficiencies of the Contractor's September invoice (which was approved by the Engineer as it was submitted in order to expedite payment) and the associated adjustments that should be made to the October invoice.

COPIES TO: _____
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FIELD REPORT

SIGNED: _____
Steven Van Shaar – Staff Engineer

Golder Associates
18300 NE Union Hill Road, Suite 200
Redmond, WA USA 98052-3333
Tel: (425) 883-0777
Fax: (425) 882-5498

TO: City of Moses Lake – Gerry McFaul

DATE: Tuesday, October 18, 2005	**JOB NO:** 033-1335-004
PROJECT: Moses Lake / Maintenance Facility Remedial Action	
LOCATION: Moses Lake, Washington	
CONTRACTOR: Anderson Environmental	**OWNER:** City of Moses Lake
WEATHER:	**TEMP:** ° at AM ° at PM
PRESENT AT SITE: Golder – Steve Van Shaar	
Anderson – Garret Hale	
City – Tim Varney, Gerry McFaul	

ON SITE: 0930 **OFF SITE:** 1600

THE FOLLOWING WAS NOTED:

Activities
The Contractor moved City Stockpile material onto the site and stockpiled it adjacent to the excavation at Excavation Area 2. Preparatory surveying, forming, and subgrade preparation began in the area of the wash rack at Excavation Area 1.

Observations
The work proceeded according to the drawings and specifications.

Sampling and testing
Three bottom samples were collected from beneath the water-filled portion of Excavation Area 2.

Coordination Meeting
Steve Anderson (Anderson) was present for the meeting. Frank Shuri and Ted Norton participated by phone. Technical and economic issues related to backfilling the remaining portion of Excavation Area 2 were discussed. It was decided that a second carbon tank and pump were required. Both the new system and the existing system would discharge to the wetlands at maximum rates (approximately 60 gpm per pump). The Contractor was authorized to begin work on the new system immediately. Steve Anderson agreed to prepare two change orders by Wednesday morning: The first would be paid on a lump sum basis and include all materials, labor, and equipment to get the systems set up; the second would be paid on a time and materials basis and include labor for operation and maintenance of the discharge system after set-up. The proposed system would operate to keep the excavation dewatered continuously, including nights and weekends if required. All remaining, required soil samples from the bottom of the excavation would be collected as soon as possible, with assistance from the Contractor or by use of a boat if necessary
It was decided that whether or not the existing hydrant system needs to be replaced, the City will pay for (and therefore take ownership of) materials already on site. The need for replacement will be assessed by Tim Varney and Bill Maddox.

Issues and resolutions
A 4-foot by 4-foot slab outside of an existing man-door at Excavation Area 1 has been proposed by the Owner. The Contractor requested that the Engineer check that the proposed size meets code. The proposed configuration meets the International Building Code (2003).
A course of action for dewatering and backfilling Excavation Area 2 was agreed upon in the coordination meeting as noted above.

Outstanding Issues
1. The drain pipe for the wash rack (which had been temporarily capped during backfilling) was opened to contain the artesian flow at Excavation Area 1. A permanent solution still needs to be found, because the drain will have to be tightlined to the wash rack catch basin. Installation of a french drain at the toe of the slope between the two halves of the excavation area has been proposed by the Engineer, but a suitable discharge pipe needs

to be verified prior to installation. This condition also precludes installation of the ball valve and accessway for the interceptor drain.

2. Results of soil testing indicate that the existing sweeper pit may not be required to be removed. More testing on the other edges of the pit will be carried out. As noted above, the hydrant system may or may not need to be replaced for other reasons besides contamination.
3. Total weight of exported soils (entire project) is 9630 tons. The Contractor requested written permission to continue export beyond the quantity shown in the Contract Documents (9500 tons). It is estimated that 2000 to 3000 additional tons of material may still need to be disposed of to reach project cleanup goals.
4. The Owner has requested a formal letter describing the deficiencies of the Contractor's September invoice (which was approved by the Engineer as it was submitted in order to expedite payment) and the associated adjustments that should be made to the October invoice.

COPIES TO: _____

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FIELD REPORT

SIGNED: _____

Steven Van Shaar – Staff Engineer

Golder Associates
18300 NE Union Hill Road, Suite 200
Redmond, WA USA 98052-3333
Tel: (425) 883-0777
Fax: (425) 882-5498

TO: City of Moses Lake – Gerry McFaul

DATE: Wednesday, October 19, 2005	**JOB NO:** 033-1335-004
PROJECT: Moses Lake / Maintenance Facility Remedial Action	
LOCATION: Moses Lake, Washington	
CONTRACTOR: Anderson Environmental	**OWNER:** City of Moses Lake
WEATHER:	**TEMP:** ° at AM ° at PM
PRESENT AT SITE: Golder – Steve Van Shaar	
Anderson – Garret Hale	
City – Tim Varney, R. Cole	
Western Pacific – Robin Dull	
Ecology – Sandra Treccani	

ON SITE: 0830 **OFF SITE:** 1700

THE FOLLOWING WAS NOTED:

Activities
The natural gas line at Excavation Area 1 was re-installed and connected. City Stockpile material was moved on site (this activity was stopped at approximately 0900 due to rain). Some stockpiled contaminated soils from Excavation Area 2 were exported. Preparations for the wash rack were completed and the wash rack was poured and finished. Several deliveries were made (including carbon vessel) in conjunction with the proposed water treatment plan.

Observations
The work proceeded in general accordance with the drawings, specifications, and Engineer's recommendations. The concrete was delivered without a batch slip. A batch slip was faxed later. While the mix satisfied the requirements of the specifications, it did not match the mix design previously submitted by the Contractor. The underpinning pile beneath the maintenance shop slab was disconnected (cut off) below the bottom of the wash rack. The void beneath the slab was filled with concrete during placement of the wash rack concrete.

Sampling and testing
The gas line at Excavation Area 1 was inspected and approved by the City (R. Cole).
Concrete testing for the wash rack was provided by Western Pacific Engineering (WPE). WPE ran a slump test and 2 entrained air tests, and cast 1 set of 4 compressive strength cylinders. The concrete passed the slump test. The entrained air was 2.7 to 2.8 percent, which does not meet the specified quantity of 4 to 8 percent.

Issues and resolutions
The City (Tim Varney and Bill Maddox) decided to replace the hydrant system (and associated water line as necessary).

Outstanding Issues
1. The drain pipe for the wash rack (which had been temporarily capped during backfilling) was opened to contain the artesian flow at Excavation Area 1. A permanent solution still needs to be found, because the drain will have to be tightlined to the wash rack catch basin. Installation of a french drain at the toe of the slope between the two halves of the excavation area has been proposed by the Engineer, but a suitable discharge pipe needs to be verified prior to installation. This condition also precludes installation of the ball valve and accessway for the interceptor drain.
2. Results of soil testing indicate that the existing sweeper pit may not be required to be removed. More testing on the other edges of the pit will be carried out. As noted above, the hydrant system will be replaced.
3. Total weight of exported soils (entire project) is 9630 tons. The Contractor requested written permission to continue export beyond the quantity shown in the Contract Documents (9500 tons). It is estimated that 2000 to 3000 additional tons of material may still need to be disposed of to reach project cleanup goals.
4. The Owner has requested a formal letter describing the deficiencies of the Contractor's September invoice (which was approved by the Engineer as it was submitted in order to expedite payment) and the associated adjustments that should be made to the October invoice.

Contract Price

The Engineer formally approved two change orders related to the new treatment plan: $10,270 56 lump sum for setup and $60 per hour and $150 per diem for operation.

The Contract price stands as follows (including tax):

Original Contract	$	679,999.71
Previously approved Change Orders	$	34,303.40
Change Orders approved today	$	14,321.83
Total Contract	**$**	**728,624.94**

COPIES TO: _____

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FIELD REPORT

SIGNED: _____

Steven Van Shaar – Staff Engineer

Golder Associates
18300 NE Union Hill Road, Suite 200
Redmond, WA USA 98052-3333
Tel: (425) 883-0777
Fax: (425) 882-5498

TO: City of Moses Lake – Gerry McFaul

DATE: Thursday, October 20, 2005	**JOB NO:** 033-1335-004
PROJECT: Moses Lake / Maintenance Facility Remedial Action	
LOCATION: Moses Lake, Washington	
CONTRACTOR: Anderson Environmental	**OWNER:** City of Moses Lake
WEATHER:	**TEMP:** ° at AM ° at PM
PRESENT AT SITE: Golder – Steve Van Shaar	
Anderson – Garret Hale	
City – Tim Varney	
Western Pacific – Robin Dull	

ON SITE: 0900 **OFF SITE:** 1400

THE FOLLOWING WAS NOTED:

Activities
Forms for the wash rack were removed. Top course was placed in Excavation Area 1. The material will be compacted after the wash rack concrete has cured. The asphalt pavement around Excavation Area 1 was swept. City Stockpile material is being transported onto the site. Import fill and top course materials were delivered. The new carbon vessel filter was activated (left to sit over the weekend) and connections for the new treatment/discharge system were begun. Approximately 120 feet of PVC still needs to be connected and the perforated pipe connected to that. Pipe (4-inch PVC) was placed from the water treatment location to the edge of the wetlands north of Penn Street. Two vehicle crossings were constructed. The crossings consisted of a v-shaped trench approximately 8 inches deep. The pipe was laid in the trench and approximately 12 inches of crushed surfacing top course was placed over the top of the pipe and graded out to either side as a ramp.
Two of the three tanks had been drained. The third tank was left to drain by gravity to the sewer over the weekend.

Observations
The work proceeded in general accordance with the drawings, specifications, and Engineer's recommendations.

Sampling and testing
Density testing at Excavation Area 2 was performed by Western Pacific Engineering. Tests indicated the backfill was compacted to at least 90 percent of maximum dry density.
Results from samples taken 10/18 indicated clean (non-detect) soils or impacts well below cleanup levels. The results indicate the sweeper pit will not have to be removed.

Outstanding Issues
1. The drain pipe for the wash rack (which had been temporarily capped during backfilling) was opened to contain the artesian flow at Excavation Area 1. A permanent solution still needs to be found, because the drain will have to be tightlined to the wash rack catch basin. Installation of a french drain at the toe of the slope between the two halves of the excavation area has been proposed by the Engineer, but a suitable discharge pipe needs to be verified prior to installation. This condition also precludes installation of the ball valve and accessway for the interceptor drain.
2. Total weight of exported soils (entire project) is 9630 tons. The Contractor requested written permission to continue export beyond the quantity shown in the Contract Documents (9500 tons). It is estimated that 2000 to 3000 additional tons of material may still need to be disposed of to reach project cleanup goals.
3. The Owner has requested a formal letter describing the deficiencies of the Contractor's September invoice (which was approved by the Engineer as it was submitted in order to expedite payment) and the associated adjustments that should be made to the October invoice.

Contract Price

The Contract price stands as follows (including tax):

Original Contract	$	679,999.71
Previously approved Change Orders	$	48,625.23
Total Contract	**$**	**728,624.94**

COPIES TO: _____

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FIELD REPORT

SIGNED: _____

Steven Van Shaar – Staff Engineer

Golder Associates
18300 NE Union Hill Road, Suite 200
Redmond, WA USA 98052-3333
Tel: (425) 883-0777
Fax: (425) 882-5498

TO: City of Moses Lake – Gerry McFaul

DATE: Monday, October 24, 2005	JOB NO: 033-1335-004
PROJECT: Moses Lake / Maintenance Facility Remedial Action	
LOCATION: Moses Lake, Washington	
CONTRACTOR: Anderson Environmental	OWNER: City of Moses Lake
WEATHER:	TEMP: ° at AM ° at PM
PRESENT AT SITE: Golder – Steve Van Shaar	
Anderson – Cory	
City – Tim Varney	

ON SITE: 0830 **OFF SITE:** 1700

THE FOLLOWING WAS NOTED:

Activities
Water was pumped from the excavation into the tanks, through the carbon filter, and discharged to the wetland. Two loads of contaminated soils were exported. Backfilling proceeded at Excavation Area 2. Material was transported onto the site from the City Stockpile north of Penn Street.

Observations
The work proceeded in general accordance with the drawings, specifications, and Engineer's recommendations.

Sampling and testing
Four samples were collected from the walls of the western half of Excavation Area 2.

Outstanding Issues
1. The drain pipe for the wash rack (which had been temporarily capped during backfilling) was opened to contain the artesian flow at Excavation Area 1. A permanent solution still needs to be found, because the drain will have to be tightlined to the wash rack catch basin. Installation of a french drain at the toe of the slope between the two halves of the excavation area has been proposed by the Engineer, but a suitable discharge pipe needs to be verified prior to installation. This condition also precludes installation of the ball valve and accessway for the interceptor drain.
2. Total weight of exported soils (entire project) is 9630 tons. The Contractor requested written permission to continue export beyond the quantity shown in the Contract Documents (9500 tons). It is estimated that 2000 to 3000 additional tons of material may still need to be disposed of to reach project cleanup goals.
3. The Owner has requested a formal letter describing the deficiencies of the Contractor's September invoice (which was approved by the Engineer as it was submitted in order to expedite payment) and the associated adjustments that should be made to the October invoice.

Contract Price
The Contract price stands as follows (including tax):

Original Contract	$	679,999.71
Previously approved Change Orders	$	48,625.23
Total Contract	$	**728,624.94**

COPIES TO:

FIELD REPORT

SIGNED:

Steven Van Shaar – Staff Engineer

Golder Associates
18300 NE Union Hill Road, Suite 200
Redmond, WA USA 98052-3333
Tel: (425) 883-0777
Fax: (425) 882-5498

DATE: Tuesday, October 25, 2005	**JOB NO:** 033-1335-004
PROJECT: Moses Lake / Maintenance Facility Remedial Action	
LOCATION: Moses Lake, Washington	
CONTRACTOR: Anderson Environmental	**OWNER:** City of Moses Lake
WEATHER:	**TEMP:** ° at AM ° at PM
PRESENT AT SITE: Golder – Steve Van Shaar	
Anderson – Cory	
City – Tim Varney	
Ecology – Sandra Treccani	
Western Pacific – Robin Dull	

TO: City of Moses Lake – Gerry McFaul

ON SITE: 0800 **OFF SITE:** 1700

THE FOLLOWING WAS NOTED:

Activities
One load of contaminated soils was exported. Backfilling continued at Excavation Area 2. Quarry spalls were used for the lower portion of the backfill in the southeast corner of the excavation. The Engineer and the Department of Ecology chose a location for the installation of a monitoring well that would replace MW-11 (which was de-commissioned prior to excavation) in Excavation Area 1.

Observations
The work proceeded in general accordance with the drawings, specifications, and Engineer's recommendations.

Sampling and testing
Six samples were collected from the walls of the western half of Excavation Area 2.
Density testing at Excavation Area 2 was performed by Western Pacific Engineering. Four tests indicated the backfill was compacted to at least 90 percent of maximum dry density. One test indicated a compaction of 89 percent of maximum dry density.

Outstanding Issues
1. The drain pipe for the wash rack (which had been temporarily capped during backfilling) was opened to contain the artesian flow at Excavation Area 1. A permanent solution still needs to be found, because the drain will have to be tightlined to the wash rack catch basin. Installation of a french drain at the toe of the slope between the two halves of the excavation area has been proposed by the Engineer, but a suitable discharge pipe needs to be verified prior to installation. This condition also precludes installation of the ball valve and accessway for the interceptor drain.
2. Total weight of exported soils (entire project) is 9630 tons. The Contractor requested written permission to continue export beyond the quantity shown in the Contract Documents (9500 tons). It is estimated that 2000 to 3000 additional tons of material may still need to be disposed of to reach project cleanup goals.
3. The Owner has requested a formal letter describing the deficiencies of the Contractor's September invoice (which was approved by the Engineer as it was submitted in order to expedite payment) and the associated adjustments that should be made to the October invoice.

Contract Price

The Contract price stands as follows (including tax):

Original Contract	$	679,999.71
Previously approved Change Orders	$	48,625.23
Total Contract	**$**	**728,624.94**

COPIES TO:

FIELD REPORT

SIGNED:

Steven Van Shaar – Staff Engineer

Golder Associates
18300 NE Union Hill Road, Suite 200
Redmond, WA USA 98052-3333
Tel: (425) 883-0777
Fax: (425) 882-5498

DATE: Wednesday, October 26, 2005	JOB NO: 033-1335-004
PROJECT: Moses Lake / Maintenance Facility Remedial Action	
LOCATION: Moses Lake, Washington	
CONTRACTOR: Anderson Environmental	OWNER: City of Moses Lake
WEATHER:	TEMP: ° at AM ° at PM
PRESENT AT SITE: Golder – Steve Van Shaar	
Anderson – Cory	
City – Tim Varney	
Western Pacific – Robin Dull	

TO: City of Moses Lake – Gerry McFaul

ON SITE: 0930 **OFF SITE:**

THE FOLLOWING WAS NOTED:

Activities
Backfilling continued at Excavation Area 2. Material was transported onto the site from the City Stockpile north of Penn Street. Excavation for a french drain began at Excavation Area 1. An existing drain pipe was located, but did not collect and transport the water flowing into it.

Observations
The work proceeded in general accordance with the drawings, specifications, and Engineer's recommendations.

Sampling and testing
No samples were collected. Sample results were not received.
Density testing at Excavation Area 2 was performed by Western Pacific Engineering. Tests indicated the backfill was compacted to at least 90 percent of maximum dry density.

Outstanding Issues
1. The drain pipe for the wash rack (which had been temporarily capped during backfilling) was opened to contain the artesian flow at Excavation Area 1. A permanent solution still needs to be found, because the drain will have to be tightlined to the wash rack catch basin. Installation of a french drain at the toe of the slope between the two halves of the excavation area has begun, but a suitable discharge pipe needs to be verified prior to installation. This condition also precludes installation of the ball valve and accessway for the interceptor drain.
2. Total weight of exported soils (entire project) is 9630 tons. The Contractor requested written permission to continue export beyond the quantity shown in the Contract Documents (9500 tons). It is estimated that 2000 to 3000 additional tons of material may still need to be disposed of to reach project cleanup goals.
3. The Owner has requested a formal letter describing the deficiencies of the Contractor's September invoice (which was approved by the Engineer as it was submitted in order to expedite payment) and the associated adjustments that should be made to the October invoice.

Contract Price
The Contract price stands as follows (including tax):

Original Contract	$	679,999.71
Previously approved Change Orders	$	48,625.23
Total Contract	$	**728,624.94**

COPIES TO:

FIELD REPORT

SIGNED:

Steven Van Shaar – Staff Engineer

Golder Associates
18300 NE Union Hill Road, Suite 200
Redmond, WA USA 98052-3333
Tel: (425) 883-0777
Fax: (425) 882-5498

TO: City of Moses Lake – Gerry McFaul

DATE: Monday, October 31, 2005	**JOB NO:** 033-1335-004
PROJECT: Moses Lake / Maintenance Facility Remedial Action	
LOCATION: Moses Lake, Washington	
CONTRACTOR: Anderson Environmental	**OWNER:** City of Moses Lake
WEATHER:	**TEMP:** ° at AM ° at PM
PRESENT AT SITE: Golder – Steve Van Shaar	
Anderson – Cory	
Western Pacific – Robin Dull	

ON SITE: **OFF SITE:**

THE FOLLOWING WAS NOTED:

Activities
Cleanup, including power washing of building wall and wash rack, was taking place at Excavation Area 1.

Observations
The work proceeded in general accordance with the drawings, specifications, and Engineer's recommendations.

Sampling and testing
Results were received for samples taken 10/24 and 10/25. The results revealed contamination above cleanup levels in the northwest and southwest corners of Excavation Area 2.
Western Pacific was on-site to test backfill placed last Wednesday. Tests indicated the backfill was compacted to at least 90 percent of maximum dry density.

Outstanding Issues
1. The drain pipe for the wash rack (which had been temporarily capped during backfilling) was opened to contain the artesian flow at Excavation Area 1. A permanent solution still needs to be found, because the drain will have to be tightlined to the wash rack catch basin. Installation of a french drain at the toe of the slope between the two halves of the excavation area has begun, but a suitable discharge pipe needs to be verified prior to installation. This condition also precludes installation of the ball valve and accessway for the interceptor drain.
2. Total weight of exported soils (entire project) is 9630 tons. The Contractor requested written permission to continue export beyond the quantity shown in the Contract Documents (9500 tons). The Contractor estimates that 2000 to 3000 additional tons of material may still need to be disposed of to reach project cleanup goals. The Engineer estimates the quantity to be much less based on recent sample results.

Contract Price
The Contract price stands as follows (including tax):

Original Contract	$	679,999.71
Previously approved Change Orders	$	48,625.23
Total Contract	**$**	**728,624.94**

COPIES TO:

FIELD REPORT

SIGNED:

Steven Van Shaar – Staff Engineer

Golder Associates
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Tel: (425) 883-0777
Fax: (425) 882-5498

DATE: Tuesday, November 1, 2005	JOB NO: 033-1335-004
PROJECT: Moses Lake / Maintenance Facility Remedial Action	
LOCATION: Moses Lake, Washington	
CONTRACTOR: Anderson Environmental	OWNER: City of Moses Lake
WEATHER:	TEMP: ° at AM ° at PM
PRESENT AT SITE: Golder – Steve Van Shaar Anderson – Garret Hale City – Gerry McFaul, Tim Varney	

TO: City of Moses Lake – Gerry McFaul

ON SITE: **OFF SITE:**

THE FOLLOWING WAS NOTED:

Activities
The southeast corner of Excavation Area 2 was backfilled above the quarry spalls. The Contractor began cleaning out tanks prior to de-mobilization of two of them.

Observations
The work proceeded in general accordance with the drawings, specifications, and Engineer's recommendations.

Sampling and testing
One water sample was collected from treated water discharged from the carbon filter.

Coordination Meeting
The following items were noted in the coordination meeting:

1. The french drain for Excavation Area 1 should be routed north, not towards Excavation Area 2. The Contractor will excavate test pits beginning at the northwest corner of the maintenance building and working back towards Excavation Area 1 in order to locate the existing drain line. The test pits will be paid on a time and materials basis. Public Works will move equipment from shop with 24 hours notice from the Contractor.
2. All drains installed by the Contractor should include tracer wire (green preferred). Risers containing the tracer wire should be set low to avoid damage.

Issues and Resolutions
Engineer approved change order for test pitting: $257/hr.

Outstanding Issues

1. Installation of a french drain at the toe of the slope between the two halves of Excavation Area 1 has begun, but a suitable discharge pipe needs to be verified prior to installation. This condition also precludes installation of the ball valve and accessway for the interceptor drain.
2. Total weight of exported soils (entire project) is 9630 tons. The Contractor requested written permission to continue export beyond the quantity shown in the Contract Documents (9500 tons). The Contractor estimates that 2000 to 3000 additional tons of material may still need to be disposed of to reach project cleanup goals. The Engineer estimates the quantity to be much less based on recent sample results.

COPIES TO:

FIELD REPORT

SIGNED:

Steven Van Shaar – Staff Engineer

Golder Associates
18300 NE Union Hill Road, Suite 200
Redmond, WA USA 98052-3333
Tel: (425) 883-0777
Fax: (425) 882-5498

TO: City of Moses Lake – Gerry McFaul

DATE: Wed, November 2, 2005	**JOB NO:** 033-1335-004
PROJECT: Moses Lake / Maintenance Facility Remedial Action	
LOCATION: Moses Lake, Washington	
CONTRACTOR: Anderson Environmental	**OWNER:** City of Moses Lake
WEATHER:	**TEMP:** ° at AM ° at PM
PRESENT AT SITE: Golder – Steve Van Shaar	
Anderson – Garret Hale	

ON SITE: **OFF SITE:**

THE FOLLOWING WAS NOTED:

Activities
The Contractor excavated test pits in 3 locations south of the maintenance shop to locate the existing drain line. The line was located and extends to the southwest corner of the building. The previously located pipe (which did not drain) was a scrap located approximately 3 feet above the actual pipe. The discharge point of this pipe is still unknown, but it does accept water.
The Contractor continued cleaning out tanks prior to de-mobilization of two of them. This will be the Contractor's work tomorrow as well, so the Engineer will not be on-site tomorrow.

Observations
The work proceeded in general accordance with the drawings, specifications, and Engineer's recommendations.

Sampling and testing
There are no lab samples outstanding.

Outstanding Issues
1. Installation of a french drain at the toe of the slope between the two halves of Excavation Area 1 has begun. A discharge pipe has been located, but it is unknown where it discharges to. This needs to be verified prior to installation. This condition also precludes installation of the ball valve and accessway for the interceptor drain
2. Total weight of exported soils (entire project) is 9630 tons. The Contractor requested written permission to continue export beyond the quantity shown in the Contract Documents (9500 tons). The Contractor estimates that 2000 to 3000 additional tons of material may still need to be disposed of to reach project cleanup goals. The Engineer estimates the quantity to be much less based on recent sample results.

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Steven Van Shaar – Staff Engineer

Golder Associates
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Redmond, WA USA 98052-3333
Tel: (425) 883-0777
Fax: (425) 882-5498

DATE: Monday, November 7, 2005	JOB NO: 033-1335-004
PROJECT: Moses Lake / Maintenance Facility Remedial Action	
LOCATION: Moses Lake, Washington	
CONTRACTOR: Anderson Environmental	OWNER: City of Moses Lake
WEATHER:	TEMP: ° at AM ° at PM
PRESENT AT SITE: Golder – Steve Van Shaar Anderson – Garret Hale City – Tim Varney	

TO: City of Moses Lake – Gerry McFaul

ON SITE: **OFF SITE:**

THE FOLLOWING WAS NOTED:

Activities
The Contractor conducted a dye test on the existing perforated drain line running west of the maintenance shop. Dye did not appear in the sanitary sewer or the storm drain manholes located in Penn Street, or in the adjacent wetlands.
The Contractor repaired the elbow joint on the water line to the hydrant next to the sweeper pit. A thrust block will be installed prior to backfilling.
The Contractor informed the Engineer that two tanks would be billed only through 11/4, even though one has not been removed from the site yet.

Observations
The work proceeded in general accordance with the drawings, specifications, and Engineer's recommendations.

Sampling and testing
There are no lab samples outstanding.

Outstanding Issues
1. Installation of a french drain at the toe of the slope between the two halves of Excavation Area 1 has begun. A discharge pipe has been located, but it is unknown where it discharges to. This needs to be verified prior to installation. This condition also precludes installation of the ball valve and accessway for the interceptor drain.
2. Total weight of exported soils (entire project) is 9630 tons. The Contractor requested written permission to continue export beyond the quantity shown in the Contract Documents (9500 tons). The Contractor estimates that 2000 to 3000 additional tons of material may still need to be disposed of to reach project cleanup goals. The Engineer estimates the quantity to be much less based on recent sample results.

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FIELD REPORT

SIGNED:

Steven Van Shaar – Staff Engineer

Golder Associates
18300 NE Union Hill Road, Suite 200
Redmond, WA USA 98052-3333
Tel: (425) 883-0777
Fax: (425) 882-5498

TO: City of Moses Lake – Gerry McFaul

DATE: Tuesday, November 8, 2005	**JOB NO:** 033-1335-004
PROJECT: Moses Lake / Maintenance Facility Remedial Action	
LOCATION: Moses Lake, Washington	
CONTRACTOR: Anderson Environmental	**OWNER:** City of Moses Lake
WEATHER:	**TEMP:** ° at AM ° at PM
PRESENT AT SITE: Golder – Steve Van Shaar	
Anderson – Garret Hale	
City – Tim Varney, Gerry McFaul.	

ON SITE: **OFF SITE:**

THE FOLLOWING WAS NOTED:

Activities
The City used their pipe camera in an attempt to find the discharge point of the existing perforated drain line running west of the maintenance shop. The camera could not go beyond 46 feet from the exposed upstream end, and thus the discharge point remains unknown. The City made the decision to connect the french drain to this pipe anyway. The connection was made and the drain line trench was partially backfilled. Compaction was performed by tamping with the excavator bucket. Wet material from the excavation was spread in Excavation Area 2 to dry.
The ball valve and accessway were installed on the interceptor drain.
The Contractor installed a pre-cast thrust block at the elbow joint on the water line to the hydrant next to the sweeper pit. The area was then backfilled. Compaction was performed using a jumping jack.

Observations
The work proceeded in general accordance with the drawings, specifications, and Engineer's recommendations.

Sampling and Testing
There are no lab samples outstanding.

Coordination Meeting
The following items were noted in the coordination meeting:
1. The Contractor's goal is to finish work by Friday 11/18.
2. All agreed that the focus of activity should be removing the remaining contamination, since it is the unknown quantity.
3. The City noted that the irrigation water had been shut off and the lake would be lowered, and asked us to note any effect on the groundwater level at the site.
4. The Contractor estimated the price of crushed surfacing over Excavation Area 2 at $8 per ton plus markup for subcontracting the work. The City verbally agreed to pay that price.

Outstanding Issues
1. Total weight of exported soils (entire project) is 9630 tons. The Contractor requested written permission to continue export beyond the quantity shown in the Contract Documents (9500 tons). The Contractor estimates that 2000 to 3000 additional tons of material may still need to be disposed of to reach project cleanup goals. The Engineer estimates the quantity to be much less based on recent sample results.

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SIGNED:

Steven Van Shaar – Staff Engineer

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Tel: (425) 883-0777
Fax: (425) 882-5498

TO: City of Moses Lake – Gerry McFaul

DATE: Wed, November 9, 2005	**JOB NO:** 033-1335-004
PROJECT: Moses Lake / Maintenance Facility Remedial Action	
LOCATION: Moses Lake, Washington	
CONTRACTOR: Anderson Environmental	**OWNER:** City of Moses Lake
WEATHER:	**TEMP:** ° at AM ° at PM
PRESENT AT SITE: Golder – Steve Van Shaar	
Anderson – Garret Hale	
City – Tim Varney	
Ecology – Sandra Treccani	

ON SITE: **OFF SITE:**

THE FOLLOWING WAS NOTED:

Activities
The Contractor moved wet material from the hydrant excavation to the City Stockpile Area to dry. Backfilling was completed at Excavation Area 1. A 4-inch layer of crushed surfacing top course was spread over the area. Excavation of contaminated soils began in the south and southeast area of Excavation Area 2. Material was placed on plastic liners.

Observations
The work proceeded in general accordance with the drawings, specifications, and Engineer's recommendations.

Sampling and Testing
One sample was collected from the south area of Excavation Area 2.

Outstanding Issues
1. Total weight of exported soils (entire project) is 9630 tons. The Contractor requested written permission to continue export beyond the quantity shown in the Contract Documents (9500 tons). The Contractor estimates that 2000 to 3000 additional tons of material may still need to be disposed of to reach project cleanup goals. The Engineer estimates the quantity to be much less based on recent sample results.

COPIES TO:

FIELD REPORT

SIGNED:

Steven Van Shaar – Staff Engineer

Golder Associates
18300 NE Union Hill Road, Suite 200
Redmond, WA USA 98052-3333
Tel: (425) 883-0777
Fax: (425) 882-5498

TO: City of Moses Lake – Gerry McFaul

DATE: Thursday, November 10, 2005	**JOB NO:** 033-1335-004
PROJECT: Moses Lake / Maintenance Facility Remedial Action	
LOCATION: Moses Lake, Washington	
CONTRACTOR: Anderson Environmental	**OWNER:** City of Moses Lake
WEATHER:	**TEMP:** ° at AM ° at PM
PRESENT AT SITE: Golder – Steve Van Shaar Anderson – Garret Hale	

ON SITE: **OFF SITE:**

THE FOLLOWING WAS NOTED:

Activities
The Contractor began work on installation of perforated groundwater drains in Excavation Area 2. Upon excavating and exposing the upstream end of the existing drain line (tightline at this point) northwest of the sweeper pit, an area of contaminated soil was discovered that had not been previously identified. At the direction of the City, the Engineer directed the Contractor to remove the contaminated material. Excavated contaminated soil was stockpiled for later hauling. During excavation, a pipeline from the catch basin north of the sweeper pit was excavated. The pipe was full of soil, cinders, and ash.
The Contractor attempted to locate the downstream end of the remaining perforated drains that would connect to the drain northwest of the sweeper pit. The drain at the south end could not be located. After discussion with the City, the Engineer decided to install the drain anyway, in a revised location.

Observations
The work proceeded in general accordance with the drawings, specifications, and Engineer's recommendations.

Sampling and Testing
The sample collected yesterday was sent to the lab.

Outstanding Issues
1. Total weight of exported soils (entire project) is 9630 tons. The Contractor requested written permission to continue export beyond the quantity shown in the Contract Documents (9500 tons) The Contractor estimates that 2000 to 3000 additional tons of material may still need to be disposed of to reach project cleanup goals. The Engineer estimates the quantity to be much less based on recent sample results.

COPIES TO:

FIELD REPORT

SIGNED:

Steven Van Shaar – Staff Engineer

Golder Associates
18300 NE Union Hill Road, Suite 200
Redmond, WA USA 98052-3333
Tel: (425) 883-0777
Fax: (425) 882-5498

DATE: Tuesday, November 15, 2005	**JOB NO:** 033-1335-004
PROJECT: Moses Lake / Maintenance Facility Remedial Action	
LOCATION: Moses Lake, Washington	
CONTRACTOR: Anderson Environmental	**OWNER:** City of Moses Lake
WEATHER:	**TEMP:** ° at AM ° at PM
PRESENT AT SITE: Golder – Steve Van Shaar	
Anderson – Garret Hale	
City – Tim Varney, Gerry McFaul	

TO: City of Moses Lake – Gerry McFaul

ON SITE: **OFF SITE:**

THE FOLLOWING WAS NOTED:

Activities
The Contractor potholed the existing drain line at the north end of the maintenance shop to assess whether the interceptor drain could discharge to it. The perforated pipe appearing in Excavation Area 2 appearing on the drawings was installed. The pipe was covered with drain rock, a tracer wire was placed, geotextile was laid on top, and then the remaining portion of the trench was backfilled with general fill compacted by tamping with the excavator bucket.

Observations
The work proceeded in general accordance with the drawings, specifications, and Engineer's recommendations.

Sampling and Testing
The results from the sample collected 11/9 indicated the south area of Excavation Area 2 meat cleanup goals and could be backfilled.

Coordination Meeting
The following items were noted in the coordination meeting:

1. Options for connecting the interceptor drain from the valve to a suitable discharge were discussed. It was decided to tightline the drain into the line that drains the wash rack. This would fit the possible future plumbing needs of the maintenance shop best. The connection will be made north of the maintenance shop. The work was approved to be done on a time and materials basis.
2. The City requested that the catch basin north of the sweeper pit should be broken off at the surface and filled in. The Contractor agreed to do the work.
3. The City Engineer signed a form authorizing the Contractor to continue excavation up to 11,875 tons (125 percent of the contract quantity).

Outstanding Issues
There are no outstanding issues.

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SIGNED:

Steven Van Shaar – Staff Engineer

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18300 NE Union Hill Road, Suite 200
Redmond, WA USA 98052-3333
Tel: (425) 883-0777
Fax: (425) 882-5498

TO: City of Moses Lake – Gerry McFaul

DATE: Wed, November 16, 2005	JOB NO: 033-1335-004
PROJECT: Moses Lake / Maintenance Facility Remedial Action	
LOCATION: Moses Lake, Washington	
CONTRACTOR: Anderson Environmental	OWNER: City of Moses Lake
WEATHER:	TEMP: ° at AM ° at PM
PRESENT AT SITE: Golder – Steve Van Shaar	
Anderson – Garret Hale	

ON SITE: **OFF SITE:**

THE FOLLOWING WAS NOTED:

Activities
The total size of existing on-site stockpiles to be potentially used as backfill was estimated (and agreed upon between the Engineer and the Contractor) to be 80 cubic yards. Muck was skimmed off of Excavation Area 2. Crushed surfacing base course was imported and spread for use as a haul road. The south fork of the groundwater drains draining to the north was installed as far as possible without moving the stockpiled contaminated soil.

Observations
The work proceeded in general accordance with the drawings, specifications, and Engineer's recommendations.

Sampling and Testing
Two composite samples from on-site stockpiles were taken and sent to the lab.

Outstanding Issues
There are no outstanding issues.

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Steven Van Shaar – Staff Engineer

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18300 NE Union Hill Road, Suite 200
Redmond, WA USA 98052-3333
Tel: (425) 883-0777
Fax: (425) 882-5498

DATE: Thursday, November 17, 2005	JOB NO: 033-1335-004
PROJECT: Moses Lake / Maintenance Facility Remedial Action	
LOCATION: Moses Lake, Washington	
CONTRACTOR: Anderson Environmental	OWNER: City of Moses Lake
WEATHER:	TEMP: ° at AM ° at PM
PRESENT AT SITE: Golder – Steve Van Shaar	
Anderson – Garret Hale	
City – Tim Varney	

TO: City of Moses Lake – Gerry McFaul

ON SITE: **OFF SITE:**

THE FOLLOWING WAS NOTED:

Activities
Crushed surfacing base course haul road was completed. Contaminated soils were hauled off (6 loads from the southeast corner, all others from the northwest). Excavation continued to the vehicle impound fence and property line fence at Penn Street.

Observations
The work proceeded in general accordance with the drawings, specifications, and Engineer's recommendations.

Sampling and Testing
One sample was taken northwest of the sweeper pit.

Outstanding Issues
There are no outstanding issues.

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Steven Van Shaar – Staff Engineer

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18300 NE Union Hill Road, Suite 200
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Tel: (425) 883-0777
Fax: (425) 882-5498

TO: City of Moses Lake – Gerry McFaul

DATE: Friday, November 18, 2005	**JOB NO:** 033-1335-004
PROJECT: Moses Lake / Maintenance Facility Remedial Action	
LOCATION: Moses Lake, Washington	
CONTRACTOR: Anderson Environmental	**OWNER:** City of Moses Lake
WEATHER:	**TEMP:** ° at AM ° at PM
PRESENT AT SITE: Golder – Steve Van Shaar Anderson – Garret Hale	

ON SITE: **OFF SITE:**

THE FOLLOWING WAS NOTED:

Activities
The Contractor removed the vehicle impound fence to allow excavation of contaminated soil. The Contractor moved the job trailer and stockpiled equipment to allow excavation of contaminated soil. Contaminated soils were hauled from the northwest corner of Excavation Area 2. The condition of the activated carbon filters was assessed and a change of carbon was approved. The Engineer also approved bringing another water tank on-site (two total).

Observations
The work proceeded in general accordance with the drawings, specifications, and Engineer's recommendations.

Sampling and Testing
Results from samples collected 11/16 indicate the stockpiled overburden soils are suitable for use as backfill. Four samples were taken northwest of the sweeper pit. Five samples (including yesterday's) were sent to the lab. Two water samples (one from each carbon filter) were taken from the filter discharge.

Outstanding Issues
The Contractor pointed out that the quantity of contaminated soils hauled or stockpiled exceeded the 11,875 tons approved 11/16. The Contractor also noted that an increase of quantities for backfilling also needed to be approved.

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SIGNED:

Steven Van Shaar – Staff Engineer

Golder Associates
18300 NE Union Hill Road, Suite 200
Redmond, WA USA 98052-3333
Tel: (425) 883-0777
Fax: (425) 882-5498

DATE: Monday, November 21, 2005	JOB NO: 033-1335-004
PROJECT: Moses Lake / Maintenance Facility Remedial Action	
LOCATION: Moses Lake, Washington	
CONTRACTOR: Anderson Environmental	OWNER: City of Moses Lake
WEATHER:	TEMP: ° at AM ° at PM
PRESENT AT SITE: Golder – Steve Van Shaar	
Anderson – Garret Hale	

TO: City of Moses Lake – Gerry McFaul

ON SITE: **OFF SITE:**

THE FOLLOWING WAS NOTED:

Activities
The Contractor changed the activated carbon filter material.

Observations
The work proceeded in general accordance with the drawings, specifications, and Engineer's recommendations.

Sampling and Testing
Results were received from samples collected 11/17 and 11/18. The results indicated that contaminated soils extend beyond the property line at Penn Street. Other samples indicated contamination levels meeting cleanup criteria. Two samples were taken from the southeast corner of Excavation Area 2.

Issues and Resolutions
The Contractor proposed a change order which would apply a surcharge for hauling and disposal of contaminated soil of $4.64 per ton that could not be direct loaded. The Engineer approved this change order.
The Contractor and Engineer agreed that excavation and backfill quantities would increase as directed by the Engineer, and be charged at the contract unit rate (subject to the surcharge above)

Outstanding Issues
1. Contaminated soils extend beyond the property line at Penn Street. It is unknown whether excavation will continue beyond the property line as part of this remedial action.

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FIELD REPORT

SIGNED:

Steven Van Shaar – Staff Engineer

Golder Associates
18300 NE Union Hill Road, Suite 200
Redmond, WA USA 98052-3333
Tel: (425) 883-0777
Fax: (425) 882-5498

TO: City of Moses Lake – Gerry McFaul

DATE: Tuesday, November 22, 2005	**JOB NO:** 033-1335-004
PROJECT: Moses Lake / Maintenance Facility Remedial Action	
LOCATION: Moses Lake, Washington	
CONTRACTOR: Anderson Environmental	**OWNER:** City of Moses Lake
WEATHER:	**TEMP:** ° at AM ° at PM
PRESENT AT SITE: Golder – Steve Van Shaar	
Anderson – Garret Hale	
City – Gerry McFaul, Tim Varney	

ON SITE: **OFF SITE:**

THE FOLLOWING WAS NOTED:

Activities
The Contractor excavated and hauled contaminated soil from the southeast corner of Excavation Area 2. This hauling is not subject to the surcharge approved 11/21.

Observations
The work proceeded in general accordance with the drawings, specifications, and Engineer's recommendations.

Sampling and Testing
Two samples were taken from the southeast corner of Excavation Area 2. Four samples (including samples collected yesterday) were sent to the lab. One sample was taken from the northwest corner of Excavation Area 2 (but was not sent to the lab).

Coordination Meeting
The following items were noted in the coordination meeting

1. The City Engineer asked for contract cost-to-date and projected total cost of construction.
2. The City asked about the existence of aerial photos that pre-date filling of the wetland on the maintenance facility site. The Engineer found out that the available aerial photos were documented in the Remedial Investigation. The earliest photo available is dated 1962, and does not pre-date the filling of the wetland.

Outstanding Issues

1. Contaminated soils extend beyond the property line at Penn Street. It is unknown whether excavation will continue beyond the property line as part of this remedial action.

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FIELD REPORT

SIGNED:

Steven Van Shaar – Staff Engineer

Golder Associates
18300 NE Union Hill Road, Suite 200
Redmond, WA USA 98052-3333
Tel: (425) 883-0777
Fax: (425) 882-5498

DATE: Wed, November 23, 2005	JOB NO: 033-1335-004
PROJECT: Moses Lake / Maintenance Facility Remedial Action	
LOCATION: Moses Lake, Washington	
CONTRACTOR: Anderson Environmental	OWNER: City of Moses Lake
WEATHER:	TEMP: ° at AM ° at PM
PRESENT AT SITE: Golder – Steve Van Shaar Anderson – Garret Hale	

TO: City of Moses Lake – Gerry McFaul

ON SITE: OFF SITE:

THE FOLLOWING WAS NOTED:

Activities
The Contractor hauled contaminated soil from the southeast (4 loads) and the northwest (subject to surcharge) of Excavation Area 2.

Observations
The work proceeded in general accordance with the drawings, specifications, and Engineer's recommendations.

Sampling and Testing
Results were received from the lab for samples collected 11/21 and 11/22 (except one taken 11/22 which was not sent until today). One sample indicates that further excavation is needed at the east end of the excavation in the southeast corner of Excavation Area 2. The other samples had contamination levels that met cleanup requirements. Three samples were taken from the northwest corner of Excavation Area 2. Four samples (including one sample collected yesterday) were sent to the lab.

Issues and Resolutions
1. Contaminated soils extend beyond the property line at Penn Street. The City authorized the Contractor to continue excavation beyond the property line, regardless of whether the Department of Ecology is willing to supply matching funds for the work.

Outstanding Issues
There are no outstanding issues.

COPIES TO:

FIELD REPORT

SIGNED:

Steven Van Shaar – Staff Engineer

Golder Associates
18300 NE Union Hill Road, Suite 200
Redmond, WA USA 98052-3333
Tel: (425) 883-0777
Fax: (425) 882-5498

TO: City of Moses Lake – Gerry McFaul

DATE: Tuesday, November 29, 2005	**JOB NO:** 033-1335-004
PROJECT: Moses Lake / Maintenance Facility Remedial Action	
LOCATION: Moses Lake, Washington	
CONTRACTOR: Anderson Environmental	**OWNER:** City of Moses Lake
WEATHER:	**TEMP:** ° at AM ° at PM
PRESENT AT SITE: Golder – Steve Van Shaar	
Anderson – Garret Hale	

ON SITE: **OFF SITE:**

THE FOLLOWING WAS NOTED:

Activities
The lines for discharge of treated groundwater had frozen. The Contractor heated and drained the discharge lines from the excavation pumps. The discharge pumps and hoses were removed and stored in the job trailer to thaw.

Observations
The work proceeded in general accordance with the drawings, specifications, and Engineer's recommendations.

Sampling and Testing
Results were received from the lab for outstanding samples collected 11/22 and 11/23. The samples had contamination levels that met cleanup requirements.

Issues and Resolutions
1. Contaminated soils extend beyond the property line at Penn Street. The City had previously authorized the Contractor to continue excavation beyond the property line, regardless of whether the Department of Ecology is willing to supply matching funds for the work. The Department of Ecology indicated that matching funds would be available for removal of contamination within the parcel lines only and requested I find out where those parcel lines are.
2. The monument for MW-18 and a short portion of the standpipe had fallen into the excavation. The well may be repaired or abandoned. The Engineer requested that some backfill be placed around MW-15 to prevent it from falling into the excavation.

Outstanding Issues
There are no outstanding issues.

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Steven Van Shaar – Staff Engineer

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Tel: (425) 883-0777
Fax: (425) 882-5498

TO: City of Moses Lake – Gerry McFaul

DATE: Wed, November 30, 2005	**JOB NO:** 033-1335-004
PROJECT: Moses Lake / Maintenance Facility Remedial Action	
LOCATION: Moses Lake, Washington	
CONTRACTOR: Anderson Environmental	**OWNER:** City of Moses Lake
WEATHER:	**TEMP:** ° at AM ° at PM
PRESENT AT SITE: Golder – Steve Van Shaar	
Anderson – Garret Hale	
City – Gerry McFaul, Tim Varney	

ON SITE: **OFF SITE:**

THE FOLLOWING WAS NOTED:

Activities
The Contractor still had problems with freezing drain lines, but got the pumps discharging to the wetland at 100+ gpm. The Contractor excavated and hauled contaminated soil from the northwest corner of Excavation Area 2.

Observations
The work proceeded in general accordance with the drawings, specifications, and Engineer's recommendations.

Sampling and Testing
Two soil samples were collected from the northwest corner of Excavation Area 2 and sent to the lab.

Coordination Meeting
The following items were noted:

1. Contaminated soils extend beyond the property line at Penn Street. The City had previously authorized the Contractor to continue excavation beyond the property line, regardless of whether the Department of Ecology is willing to supply matching funds for the work. The Department of Ecology indicated that matching funds would be available for removal of contamination within the parcel lines only and requested I find out where those parcel lines are. The City confirmed that the portion of Penn Street in question is not part of the maintenance facility parcel. The City requested that the Contractor excavate test pits in the Penn Street right-of-way to assess the extent of contamination outside the maintenance facility parcel.
2. Excavation in the southwest and southeast portions of Excavation Area 2 had required the removal of asphalt pavement. The City decided that none of the pavement removed needed to be replaced.

Outstanding Issues

1. The Contractor requested authorization to discharge water to the storm sewer.

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Steven Van Shaar – Staff Engineer

Golder Associates
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Redmond, WA USA 98052-3333
Tel: (425) 883-0777
Fax: (425) 882-5498

TO: City of Moses Lake – Gerry McFaul

DATE: Thursday, December 1, 2005	**JOB NO:** 033-1335-004
PROJECT: Moses Lake / Maintenance Facility Remedial Action	
LOCATION: Moses Lake, Washington	
CONTRACTOR: Anderson Environmental	**OWNER:** City of Moses Lake
WEATHER:	**TEMP:** ° at AM ° at PM
PRESENT AT SITE: Golder – Steve Van Shaar	
Anderson – Garret Hale	

ON SITE: **OFF SITE:**

THE FOLLOWING WAS NOTED:

Activities
The Contractor excavated contaminated soil from the southeast corner of Excavation Area 2. Fill was being imported from off-site.

Observations
The work proceeded in general accordance with the drawings, specifications, and Engineer's recommendations.

Sampling and Testing
Results were received for soil samples collected 11/30. The results indicated contamination levels that meet the cleanup requirements.
One soil sample was collected from the southeast corner of Excavation Area 2.

Outstanding Issues
1. The Contractor has requested authorization to discharge water directly to the storm sewer from the excavation.

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18300 NE Union Hill Road, Suite 200
Redmond, WA USA 98052-3333
Tel: (425) 883-0777
Fax: (425) 882-5498

TO: City of Moses Lake – Gerry McFaul

DATE: Friday, December 2, 2005	JOB NO: 033-1335-004
PROJECT: Moses Lake / Maintenance Facility Remedial Action	
LOCATION: Moses Lake, Washington	
CONTRACTOR: Anderson Environmental	OWNER: City of Moses Lake
WEATHER:	TEMP: ° at AM ° at PM
PRESENT AT SITE: Golder – Steve Van Shaar	
Anderson – Garret Hale	

ON SITE: **OFF SITE:**

THE FOLLOWING WAS NOTED:

Activities
The Contractor exported contaminated soil from the site. Excavation began in the southwest corner of Excavation Area 2.

Observations
The work proceeded in general accordance with the drawings, specifications, and Engineer's recommendations.

Sampling and Testing
Two soil samples were collected from a test pit in the southwest corner of Excavation Area 2. Two composite samples were collected from overburden stockpiles located in the northwest and southeast portions of Excavation Area 2. Five samples (including yesterday's) were sent to the lab.
Groundwater samples were collected directly from the northwest and southeast portions of Excavation Area 2 (two samples total).

Issues and Resolutions
The Engineer approved a change order for placement of crushed surfacing at a rate of $0.41 per square foot.
The Contractor submitted time and materials for removing fencing, materials, and the job trailer in order to excavate in the northwest corner of Excavation Area 2. The Engineer approved the change order for $2173.08.

Outstanding Issues
1. The Contractor has requested authorization to discharge water directly to the storm sewer from the excavation.

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Steven Van Shaar – Staff Engineer

Golder Associates
18300 NE Union Hill Road, Suite 200
Redmond, WA USA 98052-3333
Tel: (425) 883-0777
Fax: (425) 882-5498

TO: City of Moses Lake – Gerry McFaul

DATE: Monday, December 5, 2005	**JOB NO:** 033-1335-004
PROJECT: Moses Lake / Maintenance Facility Remedial Action	
LOCATION: Moses Lake, Washington	
CONTRACTOR: Anderson Environmental	**OWNER:** City of Moses Lake
WEATHER:	**TEMP:** ° at AM ° at PM
PRESENT AT SITE: Golder – Steve Van Shaar	
Anderson – Garret Hale	

ON SITE: **OFF SITE:**

THE FOLLOWING WAS NOTED:

Activities
The Contractor exported contaminated soil from the northwest portion of Excavation Area 2. Excavation continued in the southwest corner of Excavation Area 2. Fill was imported from off-site. The Contractor set up heaters to thaw the carbon vessels.

Observations
The work proceeded in general accordance with the drawings, specifications, and Engineer's recommendations.

Sampling and Testing
Results were received for samples sent 12/2. The results indicated contamination levels meeting cleanup requirements and that the stockpiled overburden material is suitable for backfill.

Issues and Resolutions
The Contractor had requested authorization to discharge water directly to the storm sewer from the excavation. Based on water sample results and input from the City and the Department of Ecology, this is acceptable.

Outstanding Issues
There are no outstanding issues

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Steven Van Shaar – Staff Engineer

Golder Associates
18300 NE Union Hill Road, Suite 200
Redmond, WA USA 98052-3333
Tel: (425) 883-0777
Fax: (425) 882-5498

DATE: Tuesday, December 6, 2005	JOB NO: 033-1335-004
PROJECT: Moses Lake / Maintenance Facility Remedial Action	
LOCATION: Moses Lake, Washington	
CONTRACTOR: Anderson Environmental	OWNER: City of Moses Lake
WEATHER:	TEMP: ° at AM ° at PM
PRESENT AT SITE: Golder – Steve Van Shaar	
Anderson – Garret Hale	

TO: City of Moses Lake – Gerry McFaul

ON SITE: **OFF SITE:**

THE FOLLOWING WAS NOTED:

Activities
The Contractor exported contaminated soil from the northwest and southwest portions of Excavation Area 2. Fill was imported from off-site. One water tank was drained. The southeast corner and the south area of Excavation Area 2 was backfilled.

Observations
The work proceeded in general accordance with the drawings, specifications, and Engineer's recommendations.

Sampling and Testing
Three soil samples were taken from the southwest portion of Excavation Area 2. One composite sample was taken from the overburden stockpile in the southwest portion of Excavation Area 2. Four samples were sent to the lab. Two samples (one from each filter) were taken from discharge from the carbon filters.

Outstanding Issues
There are no outstanding issues.

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Steven Van Shaar – Staff Engineer

Golder Associates
18300 NE Union Hill Road, Suite 200
Redmond, WA USA 98052-3333
Tel: (425) 883-0777
Fax: (425) 882-5498

TO: City of Moses Lake – Gerry McFaul

DATE: Wed, December 7, 2005	**JOB NO:** 033-1335-004
PROJECT: Moses Lake / Maintenance Facility Remedial Action	
LOCATION: Moses Lake, Washington	
CONTRACTOR: Anderson Environmental	**OWNER:** City of Moses Lake
WEATHER:	**TEMP:** ° at AM ° at PM
PRESENT AT SITE: Golder – Steve Van Shaar	
Anderson – Garret Hale	
City – Gerry McFaul, Tim Varney	
Western Pacific – Robin Dull	

ON SITE: **OFF SITE:**

THE FOLLOWING WAS NOTED:

Activities
The Contractor exported contaminated soil from the southwest portion of Excavation Area 2. Fill was imported from off-site and City stockpile material was moved onto the site as well. The water was pumped to the storm drain and backfilling began in the northwest portion of Excavation Area 2. The base course haul road was stockpiled for future use as backfill.

Observations
The work proceeded in general accordance with the drawings, specifications, and Engineer's recommendations.

Sampling and Testing
Results were received for samples sent 12/6. The results indicated contamination levels meeting cleanup requirements and that the stockpiled overburden material is suitable for backfill.
Density testing at Excavation Area 2 was performed by Western Pacific Engineering. Two tests indicated the backfill was compacted to at least 90 percent of maximum dry density. One test indicated compaction of 88 percent of maximum dry density.

Coordination Meeting
The following items were noted at the meeting:
1. The open test pit at the north end of the maintenance shop, exposing the storm line from the wash rack, was addressed as a safety concern. The Contractor agreed to provide taping/fencing around it.
2. The City decided to re-surface Excavation Area 2 with crushed surfacing base course, instead of crushed surfacing top course as previously suggested.
3. The City requested that test pits be excavated only on the south side of Penn Street, and indicated that excavation of contaminated soils would not extend beyond the centerline of Penn Street.

Outstanding Issues
There are no outstanding issues.

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SIGNED:

Steven Van Shaar – Staff Engineer

Golder Associates
18300 NE Union Hill Road, Suite 200
Redmond, WA USA 98052-3333
Tel: (425) 883-0777
Fax: (425) 882-5498

DATE: Thursday, December 8, 2005	JOB NO: 033-1335-004
PROJECT: Moses Lake / Maintenance Facility Remedial Action	
LOCATION: Moses Lake, Washington	
CONTRACTOR: Anderson Environmental	OWNER: City of Moses Lake
WEATHER:	TEMP: ° at AM ° at PM
PRESENT AT SITE: Golder – Steve Van Shaar	
Anderson – Garret Hale	
Western Pacific – Robin Dull	

TO: City of Moses Lake – Gerry McFaul

ON SITE: **OFF SITE:**

THE FOLLOWING WAS NOTED:

Activities
The Contractor exported contaminated soil from the southwest portion of Excavation Area 2. Fill was imported from off-site and City stockpile material was moved onto the site as well. Backfill was placed in the northwest and southwest portions of Excavation Area 2. Water from the southwest corner was pumped to the tanks. The Contractor and Engineer agreed on a quantity of 50 cubic yards of stockpiled overburden material that will be used as backfill.

Observations
The work proceeded in general accordance with the drawings, specifications, and Engineer's recommendations.

Sampling and Testing
There are no outstanding soil samples. No soil samples were collected.
Density testing at Excavation Area 2 was performed by Western Pacific Engineering. Tests indicated the backfill was compacted to at least 90 percent of maximum dry density.

Outstanding Issues
There are no outstanding issues.

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SIGNED:

Steven Van Shaar – Staff Engineer

APPENDIX B

SUMMARY OF SOIL AND GROUNDWATER SAMPLING PROCEDURES

SAMPLING AND MONITORING WELL INSTALLATION PROCEDURES

The Sampling and Analysis Plan [Section 4 of the Compliance Monitoring Plan (Golder, 2005)] outlined the sampling procedures for supporting the Moses Lake Maintenance Facility Cleanup. This Appendix summarizes those procedures as implemented in the field for the collection of soil, groundwater and treated water discharge, and monitoring well installation.

Confirmatory Soil Sampling

Excavation of Area 1 and Area 2 was conducted using an excavator, and removed approximately 13,500 cubic yards of contaminated soil from the Site. Soil was excavated from 4 to 8 ft below ground surface (bgs), depending on location and depth of underlying confining soils. Groundwater was encountered, on average, at 2 to 3 feet bgs.

During excavation, soils were inspected for visual signs of contamination (staining and sheen testing), tested using a PetroFlag hydrocarbon analyzer, surveyed for volatile organic compounds (VOCs) using a photoionization detector (PID), and evaluated for odors. Soils were not assessed using the PetroFlag hydrocarbon analyzer to the extent outlined in the SAP due to interference from high moisture and organic content in excavated soils. Photographs of soil conditions were also obtained and are provided in Appendix D.

Based on the results of the field assessment, additional material was removed or confirmatory samples were collected for chemical analysis. Confirmatory samples were analyzed for diesel through motor oil and gasoline range petroleum hydrocarbons, and benzene, toluene, ethylbenzene, and xylene (BTEX). Soil samples were collected from both the excavation bottom and sidewalls. Gasoline range petroleum hydrocarbons and BTEX samples were generally collected using a "sample syringe" and pre-weighed VOA vials in accordance with EPA Method 5035A. Diesel samples were collected by placing soil directly into 4 to 8 ounce jars using a stainless steel spoon. Samples were labeled, and placed in ice chest with ice, and maintained under a chain of custody during shipping to the analytical laboratory. Chain of custody was maintained in accordance with TP-1 2-23, "Sample Handling and Chain of Custody."

Soil samples were collected directly from the excavations or from in-situ soils contained in the backhoe bucket when entry into the excavations was considered to be unsafe. Based on sample results contaminated soil was generally loaded on trucks for disposal. Some Area 2 soils were segregated into "clean" stockpiles and used for backfill after analysis confirmed contamination was below cleanup levels. These activities were performed in general accordance with the technical procedures provided in the Quality Assurance Project Plan (QAPP) Appendix B of the CMP (Golder, 2005).

Groundwater Sampling

Monitoring Well Sampling

To meet protection monitoring requirements as outlined in the CMP (Golder, 2005), groundwater samples were collected from monitoring wells MW-17 and MW-18 during excavation of Area 2. Groundwater samples were submitted to the laboratory for analysis of diesel-range petroleum hydrocarbons by the NWTPH-Dx method, and for bromodichloromethane by EPA 8260B. These activities were performed in general accordance with the technical procedures provided in the QAPP Appendix B of the CMP (Golder, 2005).

In general, groundwater sampling began with the measurement of static water levels in the wells and calculation of purge volume. Water levels were taken according to the specifications of procedure IP-1.4-6 "Water Level Measurements." An electric well sounder was used to determine water level to the nearest 0.01 ft from the elevation survey mark. The measurements, date, times, and well designations were recorded on field forms.

Wells were purged using a submersible pump and dedicated tubing; a minimum of three well purge volumes were pumped from each. Purge water was collected in 55-gallon drums for temporary onsite storage prior to disposal. During purging, field parameters (pH, specific conductance, temperature, and turbidity) were measured and monitored for stability as defined in the SAP. Field parameter measurements and purge volumes were recorded on field forms. Sample collection and handling were conducted as described in procedure TP-1.2-20 "Collection of Groundwater Quality Samples." When at least three well volumes of groundwater had been purged and field parameters stabilized, groundwater samples were collected in the appropriate sample containers (including preservatives) as detailed in the QAPP. After the containers were filled, they were immediately sealed, labeled, and placed in a cooler with ice, maintained under a chain of custody and shipped to the analytical laboratory. Chain of custody was maintained in accordance with TP-1.2-23, "Sample Handling and Chain of Custody."

Treated Excavation Groundwater Sampling

Groundwater that collected in the Area 1 and Area 2 excavations was pumped to a Baker tank for temporary onsite storage and treatment. Groundwater contained in the Baker tank(s) was passed through a 55-gallon carbon filter unit prior to discharge to either the sanitary water treatment plant or the adjacent wetland. Samples of the treated discharge were collected during the course of the cleanup. Samples were collected on the downstream side of the carbon unit to monitor the discharge. Sample of the discharge were routinely analyzed for arsenic, diesel, motor oil and gasoline (including BTEX) range petroleum hydrocarbons.

Sampling Equipment Decontamination

Decontamination of non dedicated soil and groundwater sampling equipment was conducted in general accordance with the procedures outlined in the Quality Assurance Project Plan (QAPP) Appendix A of the Compliance Monitoring Plan (Golder 2005). Sampling equipment was decontaminated prior to the start of sampling activities and between uses. Equipment was washed with a non-phosphate detergent (Alconox or equivalent) solution using brushes to remove all visible dirt and grit. A tap water rinse was followed by a rinse with organic-free distilled/deionized water. All decontamination rinsates produced during sampling were collected and transferred to purge water drums.

Monitoring Well Installation

These activities were performed according to the technical procedures in the attached QAPP. Drilling and soil logging were conducted in according to the specifications of procedure TP-1.2-5 "Drilling, Sampling and Logging of Soils". Soil identification for logging purposes was performed as described in procedure TP-1.2-6 "Field Identification of Soil".

Monitoring well MW-19, the replacement for MW-11, was drilled using a 4.25-inch ID, 8-inch OD hollow stem auger (HSA). Soil samples were collected continuously using a 2.5-inch ID split spoon samplers. The sampler was placed at the top of the desired sampling interval and advanced beyond the cutting edge of the lead auger by a 300-pound hammer with a 30-inch drop. After

driving the sampler to depth, the sampler was removed from the augers and broken down. The in-situ soil sampler within the sampler was lithologically logged and field screened for VOCs using a PID.

Upon completion of drilling, MW-19 was installed in conformance with Washington State well construction regulations (WAC 173-160). The well was completed with a 2-inch diameter, schedule-80 PVC 0.010-inch slot well screens and casing with O-ring seals between joints. Groundwater was encountered approximately 3 feet bgs. The well screen was installed to straddle the water table surface. Well installation was conducted inside the auger flights. The filter pack was installed 6 inches below the well screen to about 6 inches to 1 foot above the topmost slot on the screen. The filter pack materials consisted of 10/20 Colorado silica sand. A bentonite seal was installed and covered with an additional one foot of concrete that extended into a slightly domed pad. The well was completed with nominal 8-inch diameter protective steel flush-mount well monument.

APPENDIX C

LABORATORY ANALYTICAL RESULTS AND DATA VALIDATION PACKAGE

MOSES LAKE MAINTENANCE FACILITY
DATA VALIDATION QA/QC REVIEW

A total one hundred and ten soil, four groundwater, and one trip blank samples were collected between September and December, 2005 as part of the *Draft Compliance Monitoring Plan, City of Moses Lake Maintenance Facility Project (March 5, 2005)* Samples were analyzed by Wy'East Environmental Sciences, Incorporated (Wy'East) of Portland, Oregon and OnSite Environmental Incorporated (OnSite) of Redmond, Washington for the following parameters:

- Volatile organic compounds (VOCs) by Method 8260B;
- Hydrocarbon Identification by Methods NWTPH-HCID, NWTPH-Dx, and NWTPH-Gx/BETX;
- Arsenic by Method 200.8

Samples were analyzed in accordance with procedures described in *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (USEPA SW-846, 3rd edition) and Washington State Department of Ecology methods for analysis for fuel hydrocarbons*. The data validator observed several analytical discrepancies between the cited methods and these are addressed in the Reporting Section and other relevant sections of this report.

Based on a limited review data are of known and acceptable quality with the following qualifiers summarized below:

For Wy'East no precision data in the form of laboratory duplicate, field duplicate, matrix spike/matrix spike duplicate data was available for samples associated with laboratory numbers 57803, 57851, 57852, 57892, 57931, 57950, 57988, 58116, 58420, 58499, 58640, and 58775. All associated positive results for NWTPH-Dx and NWTPH-Gx/BETX are qualified as estimated (J) due to the lack of precision data.

Wy'East did not indicate condition of samples upon sample receipt thus no determination regarding the condition of samples submitted could be made. Samples submitted for gas and BETX may have been compromised when sample collection time and sample receipt dates differ by more than 48 hours. Potentially impacted samples may include laboratory numbers 57784, 57851, 57852, 57950, 58593, 58668, and 58775. All associated NWTPH-Gx/BETX results are qualified as estimated J/UJ.

Wy'East matrix spike/matrix spike duplicate analysis was requested on eight samples (per COC request on Laboratory Numbers 58196, 58526, 58570, 58640, 58668, 58701, and 58845). Review of the NWTPH-Gx spike data indicates that five spike recoveries were high (Laboratory Numbers 58526, 58570, 58640, 58668, and 58845) and outside the 70-130% control limit criteria. All NWTPH-Gx results associated with Laboratory Numbers 58526, 58570, 58640 (positive results previously qualified due to lack of precision data), and 58845 are qualified as estimated (J/UJ). No action was necessary for Laboratory Number 58668 since NWTPH-Gx results were previously qualified due to undocumented cooler receipt conditions.

Wy'East Laboratory Number 57852: Samples EX-1-SWMB-1 (4) and EX-1-SWMB-35 (6) gasoline hydrocarbon results are qualified as estimated (J) as they do not match standard gasoline chromatograms. These samples were previously qualified (J/UJ) due to undocumented cooler receipt conditions and due to the lack of precision data.

Data validator performed a limited data review under the schedule requirements. Review was limited to the data package and supplemental material supplied by the Wy'East Laboratory February 17 and 18, 2006.

Samples were analyzed and results reported by the laboratory in batch numbers as summarized below:

OnSite 0509-184 (NWTPH-Gx/BTEX and NWTPHDx):

EX-1-0922-A5	**EX-1-0922-C7 (split)**
EX-1-0922-B2 (split)	

Wy'East 57784 (NWTPH-Gx/BTEX and NWTPHDx):

EX-1-B(2) (split)	**EX-1-D(8)**
EX-1-C(7) (split)	**EX-1-E(8)**

Wy'East 57803 (NWTPH-Gx/BTEX and NWTPHDx):

EX-2-0928-C(4)	**EX-2-0928-J(6)**	**EX-1-0928-G(7)**
EX-2-0928-F(4)	**EX-1-SWMB-40(8)**	**EX-1-0928-F(8)**
EX-2-0928-H(5)	**EX-1-SWMB-60(4)**	

Wy'East 57851 (NWTPH-Gx/BTEX and NWTPHDx):

EX-1-SWMB-40(8)	**EX-1-SWMB-55(8)**	**EX-1-SWMB-70(4)**
EX-1-SWMB-45(8)	**EX-1-SWMB-60(4)**	**EX-2-0929-K(6)**
EX-1-SWMB-50(8)	**EX-1-SWMB-65(4)**	

Wy'East 57852 (NWTPH-Gx/BTEX and NWTPHDx):

EX-1-SWMB-1(4)	**EX-1-SWMB-20(5)**	**EX-2-25N-50E-4**
EX-1-SWMB-5(4)	**EX-1-SWMB-25(5)**	**EX-2-25N-100E-4**
EX-1-SWMB-10(4)	**EX-1-SWMB-30(6)**	**EX-2-50N-125E-4**
EX-1-SWMB-15(5)	**EX-1-SWMB-35(6)**	**EX-2-60N-125E-4**

Wy'East 57892 (NWTPH-Gx/BTEX and NWTPHDx):

EX-2-25N-50E-7	EX-2-100N-130E-3WALL	EX-2-25N-100E-5WALL
EX-2-50N-75E-6	EX-2-75N-50E-6(B)	EX-2-50N-125E-3WALL
EX-2-75N-140E-2WALL	EX-2-90N-50E-7(B)	

Wy'East 57931 (NWTPH-Gx/BTEX and NWTPHDx):

EX-2-50N-10W-7B	EX-2-120N-50E-6B	EX-1-P-5W
EX-2-50N-40W-6B	EX-1-M-4W	
EX-2-50N-60W-7B	EX-1-N-4W	

Wy'East 57950 (NWTPH-Gx/BTEX and NWTPHDx):

EX-1-Q-6B	EX-1-S-6B	EX-2-140N-150E-3E
EX-1-R-6W	EX-2-90N-100E-3B	

Wy'East 57988 (NWTPH-Gx/BTEX and NWTPHDx):

EX-2-180N-130E-3B	EX-2-180N-70E-3W	EX-2-180N-40E-6B
EX-2-125N-150E-2W	EX-2-140N-100E-4B	
EX-2-190N-135E-2W	EX-2-195N-45E-4W	

OnSite 0510-122 (NWTPH-Gx/BTEX, NWTPHDx, NWTPH-HCID, Volatiles, and Arsenic):

EX-1-GW-101705	CF3-101705

OnSite 0510-151 (NWTPH-Gx/BTEX, NWTPHDx, and Volatiles):

MW-17	Trip Blank
MW-18	

Wy'East 58116 (NWTPH-Gx/BTEX and NWTPHDx):

EX-2-80N-5E-7B	EX-2-120N-40W-5B	EX-2-175N-90E-3W
EX-2-80N-45W-7B	EX-2-190-60E-4W	

Wy'East 58196 (NWTPH-Gx/BTEX and NWTPHDx):

EX-2-150N-45W-4W	EX-2-125N-60W-4W	EX-2-55N-60W-5W
EX-2-150N-45W-4WD	EX-2-35N-40W-4W	EX-2-55N-60W-6W
EX-2-35N-10W-5W	EX-2-35N-40W-6W	
EX-2-35N-10W-5WD	EX-2-90N-60W-5W	

Wy'East 58420 (NWTPH-Gx/BTEX and NWTPHDx):

EX-2-10N-30E-4W

Wy'East 58499 (NWTPH-Gx/BTEX and NWTPHDx):

SP-1-200N-40E-C	SP-2-ON-40E-C

Wy'East 58526 (NWTPH-Gx/BTEX and NWTPHDx):

EX-2-270N-2E-5W	EX-2-240N-15E-5W	EX-2-220N-OE-6BD
EX-2-290N-10W-4W	EX-2-220N-OE-6B	

Wy'East 58570 (NWTPH-Gx/BTEX and NWTPHDx):

EX-2-40N-150E-4W	EX-2-10N-115E-4W
EX-2-55N-150E-4W	EX-2-10N-115E-4WD

Wy'East 58593 (NWTPH-Gx/BTEX and NWTPHDx):

EX-2-285N-50W-3.5W	EX-2-230N-10W-5B
EX-2-240N-25W-4W	EX-2-230N-10W-5BD

Wy'East 58640 (NWTPH-Gx/BTEX and NWTPHDx):

EX-2-180N-40W-5W EX-2-170N-30W-5B

Wy'East 58668 (NWTPH-Gx/BTEX and NWTPHDx):

EX-2-20N-20W-5W EX-2-20N-20W-5WD SP-4-40N-160E-C

EX-2-55N-160E-4W SP-3-200N-40W-C

Wy'East 58775 (NWTPH-Gx/BTEX and NWTPHDx):

EX-2-300N-15W-3W EX-2-335N-25W-3W

Wy'East 58701 (NWTPH-Gx/BTEX and NWTPHDx):

EX-2-20N-10E-5W EX-2-20N-10E-5WD

EX-2-30N-25W-4W SP-5-20N-15E-C

Wy'East 58845 (NWTPH-Gx/BTEX and NWTPHDx):

EX-2-295N-30W-3W EX-2-290N-20W-4B

EX-2-295N-30W-3WD

Quality assurance/quality control (QA/QC) reviews of laboratory data were performed in the laboratory in accordance with the laboratory quality assurance program plan with the following discussion Samples were performed under expedited analysis requests and the majority of the samples were submitted to Wy'East for quick turnaround Wy'East is a Washington State certified laboratory however its laboratory quality assurance program was not reviewed by Golder, in part because of the quick project timeline.

The data validation QA/QC review focused primarily on laboratory result summary sheets and quality control summary sheets to ensure that work plan data quality objectives were met for the project. Supplemental data was requested from Wy'East to better determine the data quality. Review of some of the requested supplemental data is pending its receipt however based on previous discussions with the laboratory it seems unlikely that laboratory precision data will be provided thus the conclusions of this data validation report will not change significantly.

Data validation was conducted in accordance with the criteria outlined in the National Functional Guidelines for Organic Data Review (EPA 1999) and the National Functional Guidelines for Inorganic Data Review (EPA 2000), modified to include method specific requirements of the laboratory analytical methods. A level II validation was performed on this data package which included a review of quality assurance sample results, comparison of the laboratory package to the Draft City of Moses Lake Maintenance Facility Quality Assurance Project Plan (QAPP), and qualification of data. The Draft QAPP outlined QA objectives which include the following:

- Sample receipt "condition found" documentation was to be provided. Review indicates that adequate information was provided by OnSite and no information regarding condition of samples upon sample receipt was provided by Wy'East;
- Dilution factors were to be included. Samples submitted to OnSite were not diluted although adequate information is typically provided in the form of adjusted reporting limits adjacent to the results. Wy'East verbally indicated that no dilutions were necessary;
- Raw data chromatograms were to be provided for samples with detected results for all organic analysis. No raw data chromatograms were provided by either laboratory and given the scope of this limited review they are not considered necessary;
- Analytical quality control results and summary documents were to be provided by both laboratories. OnSite provided satisfactory analytical quality control data. Supplemental data was requested from Wy'East. Precision data was requested but not received from Wy'East. Surrogate recovery was not reported with the blank data. These anomalies are discussed further in this report.
- Matrix spike/matrix spike duplicate analysis frequency per the QAPP is one every analytical batch or every 10 samples. In place of this a blank spike with field or laboratory duplicate data is acceptable. In this regard OnSite provided satisfactory analytical quality control data with one minor exception and Wy'East provided blank spike data.

The following is a summary of quality control elements associated with each analytical fraction and the status of that element as a result of the data validation process.

SAMPLE RECEIPT

Wy'East laboratory did not note the condition of samples upon receipt which involved the receipt of 19 separate sample deliveries between September and December 2005. Typically samples were received 1 to 2 days after sample collection; however seven sets of samples (Laboratory Numbers 57784, 57851, 57852, 58775, 58668, 58593, and 57950) were received 3 to 5 days and one (58775) at 12 days after sample collection. NWTPH-Gx and BETX results associated with Laboratory Numbers 57784, 57851, 57852, 58775, 58668, 58593, and 57950 are considered estimated J/UJ.

It was noted that the COC for laboratory number 57784 was not signed by the laboratory upon sample receipt. No action was taken.

REPORTING

Review identified the following discrepancies:

- Wy'East did not indicate condition of samples upon sample receipt thus no determination regarding the condition of samples submitted could be made. Samples submitted for gas and BETX may have been compromised when sample collection time and sample receipt dates differ by more than 48 hours. Potentially impacted samples may include laboratory numbers 57784, 57851, 57852, 58775, 58668, 58593, and 57950. All associated NWTPH-Gx/BETX results are qualified as estimated J/UJ.

- Wy'East did not include a cover letter or case narrative discussing condition of sample receipt, data discrepancies or anomalies with its sample results. This said Wy'East did qualify some of its results due to various reasons qualitative and quantitative reasons (i e. gasoline compound identification). These qualifiers are reported directly with the data. Refer to the surrogate and compound identification sections for further details and qualifiers.

- Wy'East did not perform acid/silica gel or alumina cleanup on samples submitted for NWTPH-Dx. This is only noted because all samples submitted to OnSite for NWTPH-Dx analysis underwent acid/silica gel cleanup. According to the Washington State Department of Ecology NWTPH-Dx Method cleanup may be performed if "samples contain significant amount of naturally occurring non-petroleum organics, e.g. leaf litter, bark etc., which may contribute to biogenic interferences..." No action was taken other than to note this.

- Wy'East and Onsite did not provide sample chromatograms. As this is a Level II review these were not requested as part of the supplemental data due the fact that this data was not requested upfront and due to data validation timeline.

- Wy'East laboratory did not report sample dry weights. However results were reported on a dry weight basis and non detected sample results were reported as "ND". Percent solids data was requested from Wy'East. Actual reporting limits for each sample can be obtained with this data with the noted exceptions. No dry weight results were available for laboratory numbers 57784, 58116, and 58593. Wy'East footnoted the dry weight results to indicate that "for clean samples, dry weight correction of results is not applicable. Therefore, for some clean samples dry weight was not calculated." Review of the percent solids data indicate that most reporting limits are not impacted significantly. No action is taken other than to notify the data user and to attach the percent solids data to the data validation summary worksheets.

- Wy'East laboratory did not report sample dilutions. Wy'East verbally indicated that they had not performed any dilutions on any of the samples submitted for this project.

- Wy'East laboratory did not indicate date of analysis. Date reported was used to assess holding time. Most samples were analyzed within a quick turnaround and all samples were analyzed within the recommended holding times.

- Wy'East did not perform duplicate sample per set of 10 or fewer samples (10%) for NWTPH-Dx analysis as specified in the method. Eight sets of field duplicates and two sets of field splits were collected throughout the project. Refer to the field duplicate sections of this report for further details

- No precision data in the form of laboratory duplicate, field duplicate, matrix spike/matrix spike duplicate data was available for samples associated with 57803, 57851, 57852, 57892, 57931, 57950, 57988, 58116, 58420, 58499, 58640, and 58775. All associated positive results for NWTPH-Dx, NWTPH-Gx/BETX are qualified as estimated (J/UJ) due to the lack of precision data.

- Wy'East, upon request, provided blank spike data for NWTPH-Dx, and the NWTPH-Gx data. Review of all available quality control associated with the NWTPH-Gx and BETX results is pending receipt from the laboratory.

- For laboratory numbers 57784 and 57803 Wy'East reporting limit for NWTPH-Gx was 250 ug/Kg. Wy'East was contacted to confirm this reporting limit as Wy'East's typical reporting limit for gasoline is 20 mg/Kg. Wy'East indicated that samples associated with laboratory numbers 57784 and 57803 consisted of 5 grams of soil in 5 milliliters of water. For NWTPH-Gx the water samples were analyzed as water and converted from ug/L to ug/Kg in soil. For laboratory 57784 two samples (EX-1-B (2) and EX-1-C (7)) were split with OnSite (0509-184 – samples EX-1-0922-B2 and EX-1-0922-C7 respectively). OnSite treated the samples as soils and percent solids ranged from 74%- to 82%. For further discussion regarding overall agreement refer to the method appropriate field duplicate sections.

VOLATILE ORGANIC COMPOUNDS

The laboratory provided a summary data package for review for the VOC analysis. The items reviewed during validation are summarized below.

Analytical Methods – *acceptable*

Samples for VOC analysis were analyzed by gas chromatography/mass spectrometry (GC/MS) using EPA SW846 Method 8260B. OnSite performed VOC analyses.

Sample Holding Times– *acceptable*

All samples were prepared and analyzed within 14 days of sample collection (soil samples and preserved water samples). All holding time criteria were met.

Laboratory Reporting Limits – *acceptable*

The laboratory achieved the reporting limits (RLs) required by the QA Plan.

Blank Contamination – *acceptable*

The method and trip blanks were free of target compounds.

Surrogate Recovery – *acceptable*

All surrogate recoveries were within control limits.

Matrix Spike Compound Recovery – *acceptable*

Matrix Spike/Matrix Spike Duplicate (MS/MSD) analyses were not performed. Refer to LCS/LCSD (also known as spike blank/spike blank duplicate – SB/SBD) for precision and accuracy data.

Laboratory Control Sample Recovery – *acceptable*

Laboratory control samples/laboratory control sample duplicate samples (LCS/LCSD) were evaluated using 70 to 130 percent per the QA Plan. All LCS criteria met the laboratory established LCS (SB) limits.

NWTPH-Gx/BETX

OnSite laboratory provided a summary data package for review for the NWTPH-Gx/BETX analysis. Wy'East provided a very limited data package for review for the NWTPH-Gx/BETX analysis. Supplemental data was requested and final review is pending its receipt. The items reviewed during validation are summarized below.

Analytical Methods – ***acceptable***

Samples for NWTPH-Gx/BETX analysis were analyzed by gas chromatography/PID using Washington State methodology/EPA 8021/5035

Sample Holding Times– ***acceptable***

All samples were prepared and analyzed within 14 days of sample collection (soil samples and preserved water samples). All holding time criteria were met.

Laboratory Reporting Limits – ***acceptable***

The laboratory achieved the reporting limits (RLs) required by the QA Plan with the following discussion:

QAPP stipulated Practical Quantitation Limit for NWTPH-Gx was 5 mg/Kg however Wy'East reporting limit for NWTPH-Gx was 20 mg/Kg. No action was taken since Ecology Cleanup Criteria (1994) is 30 mg/Kg.

For laboratory numbers 57784 and 57803 Wy'East reporting limit for NWTPH-Gx was 250 ug/Kg. Wy'East was contacted to confirm this reporting limit as Wy'East's typical SOIL reporting limit for gasoline is 20 mg/Kg. Wy'East indicated that samples associated with laboratory numbers 57784 and 57803 consisted of 5 grams of soil in 5 milliliters of water. For NWTPH-Gx the water samples were analyzed as water and converted from ug/L to ug/Kg in soil. For laboratory 57784 two samples (EX-1-B (2) and EX-1-C (7)) were split with OnSite (0509-184 – samples EX-1-0922-B2 and EX-1-0922-C7 respectively). OnSite treated the samples as soils and percent solids ranged from 74% to 82%. It appears that the reporting limits for the split data differ by a factor of 10. For further discussion regarding field duplicate results refer to the field duplicate sections. No dry weight results were available for respective Wy'East split samples from Laboratory Number 57784. Wy'East footnoted the dry weight results to indicate that "for clean samples, dry weight correction of results is not applicable. Therefore, for some clean samples dry weight was not calculated." For a rough approximation of percent solids in the samples OnSite data can be used.

Blank Contamination – ***acceptable***

The method and trip blanks were free of target compounds.

Surrogate Recovery

For OnSite all surrogate recoveries were within control limits.

For Wy'East all surrogate recoveries were not calculated according to standard methods as follows:

Wy'East indicates within its supplemental data package that for NWTPH-Gx/BETX "for each analytical batch, the blank is used as the standard by which the surrogate recoveries of the samples are calculated. By definition, the surrogate recovery of each blank will be 100%." Note that surrogate recoveries for the method blanks were not reported. There are some potential issues associated with this (i.e. internal monitoring of surrogate degradation, or verification that the correct peak is being quantitated as the surrogate and not masked by the target analyte). No action was taken solely on the method of calculating the surrogate recovery or lack of blank surrogate data.

Matrix Spike Compound Recovery

For OnSite matrix spike/matrix spike duplicate (MS/MSD) analyses were performed and all recoveries were acceptable with one minor exception. No spike data were reported with OnSite 0510-151 but no action is necessary since gas was not detected in any of the associated samples.

For Wy'East matrix spike/matrix spike duplicate analysis was requested on eight samples (per COC request on Laboratory Numbers 58196, 58526, 58570, 58640, 58668, 58701, and 58845). It should be noted that the laboratory accidentally spiked "P5014" instead of "P5015" (Sample EX-2-20N-10E-5W instead of sample EX-2-30N-25W-4W). Upon request Wy'East provided matrix spike data for NWTPH-Gx. Based on this review it is not entirely clear why stated results are substantially less than the reporting limit and clarification is pending response from the laboratory. Matrix spike duplicate data was not available. Review of the spike data indicates that five spike recoveries were high (Laboratory Numbers 58526, 58570, 58640, 58668, and 58845) and outside the 70-130% control limit criteria. All NWTPH-Gx results associated with Laboratory Numbers 58526, 58570, 58640, 58668, and 58845 are qualified as estimated (J/UJ). Note that there may be some overlap with previously assigned qualifiers.

Laboratory Control Sample Recovery

Laboratory control samples/laboratory control sample duplicate samples (LCS/LCSD) were evaluated using 70 to 130 percent per the QA Plan.

Supplemental LCS data was provided by Wy'East. It should be noted that QC batch numbers were not listed on the original reports thus the only cross reference provided was with the laboratory numbers listed in the supplemental data. Blank spike data for five blank spikes (Laboratory numbers 57784, 58526, 58570, 58640, and 58845) were high and outside of the 70-130% control limit criteria. All NWTPH-Gx results associated with Laboratory Numbers 57884, 58526, 58570, 58640, and 58845 are qualified as estimated (J/UJ). Note that there may be some overlap with previously assigned qualifiers.

Compound Identification

The laboratory compared sample chromatograms with gasoline standard chromatograms and based on this comparison Wy'East qualified these results to indicate qualitative or quantitative uncertainty with the results (the chromatogram was a poor match or other organics were detected in the sample). NWTPH-Gx (gasoline) sample results are considered estimated and qualified 'J' in the following instances.

Laboratory Number 57852: Samples EX-1-SWMB-1 (4) and EX-1-SWMB-35 (6) gasoline hydrocarbon results are qualified as estimated (J). They are also qualified as estimated (J) due to the lack of precision data.

Field Duplicate Sample Analysis

Field duplicate samples were collected and analyzed as follows:

Laboratory SDG	Sample	Field Duplicate
58196	EX-2-150N-45W-4W	EX-2-150N-45W-4WD
58196	EX-2-35N-10W-5W	EX-2-35N-10W-5WD
58526	EX-2-220N-OE-6B	EX-2-220N-OE-6BD
58570	EX-2-10N-115E-4W	EX-2-10N-115E-4WD
58593	EX-2-230N-10W-5B	EX-2-230N-10W-5BD
58668	EX-2-20N-20W-5W	EX-2-20N-20W-5WD
58701	EX-2-20N-10E-5W	EX-2-20N-10E-5WD
58845	EX-2-295N-30W-3W	EX-2-295N-30W-3WD

Work plan advisory goals for precision (35%) were met with the following exceptions:

For Laboratory Number 58196 field duplicate pair EX-2-150N-45W-4W and EX-2-150N-45W-4WD results for ethylbenzene and xylene were reported as not detected in one sample and as 260 ug/Kg and 370 ug/Kg in the field duplicate pair. No action is taken other than to note that these results differ by a factor of over 5X indicating major disagreement.

For Laboratory Number 58845 field duplicate pair EX-2-295N-30W-3W and EX-2-295N-30W-3WD results for toluene and xylene were reported as not detected in one sample and as 190 ug/Kg, and 200 ug/Kg resepctively in the field duplicate pair. No action is taken other than to note that these results differ by a factor of over 4X indicating major disagreement for toluene and xylene.

For laboratory 57784 two samples (EX-1-B (2) and EX-1-C (7)) were split with OnSite (0509-184 – samples EX-1-0922-B2 and EX-1-0922-C7 respectively). OnSite treated the samples as soils and percent solids ranged from 74%- to 82%. Wy'East indicated that samples submitted for NWTPH-Gx analysis consisted of 5 grams of soil in 5 milliliters of water. For NWTPH-Gx the water samples were analyzed as water and converted from ug/L to ug/Kg in soil. All NWTPH-Gx were reported as ND. No action was taken other than to note the differing detection limits.

NWTPH-Dx/ NWTPH-HCID

The laboratory provided summary forms for the hydrocarbon identification fraction. The items reviewed during validation are summarized below.

Analytical Methods – *acceptable*

Samples were analyzed by gas chromatography\flame ionization detector (GC\FID) using Method NWTPH methodology.

Sample Holding Times– *acceptable*

All samples were analyzed within 14 days of collection (preserved waters and soils).

Laboratory Reporting Limits – *acceptable*

The laboratory achieved the reporting limits (RLs) required by the QA Plan.

Blank Contamination – *acceptable*

The method blanks were free of target compounds.

Laboratory Duplicate

No precision data was available for the fuel screening method (HCID). Precision data is not necessary for the HCID method.

OnSite provided adequate precision data for NWTPH-Dx method with acceptable RPDs.

Wy'East did not perform duplicate sample per set of 10 or fewer samples (10%) for NWTPH-Dx analysis as specified in the method. Eight sets of field duplicates and two sets of field splits were collected throughout the project. Refer to the field duplicate section of this report for further details. No precision data was performed on samples associated with the following laboratory numbers 57803, 57851, 57852, 57892, 57931, 57950, 57988, 58116, 58420, 58499, 58640, and 58775. All positive NWTPH-Dx results are considered estimated and qualified J/UJ.

Surrogate Recovery

All surrogate recoveries were within control limits with the following exceptions.

Note that Wy'East surrogate recoveries for the method blanks were not reported. No action is taken on this basis alone.

For Wy'East Laboratory Number 58526 surrogate recovery (2-fluorobiphenyl) was not reported for sample EX-2-290N-10W-4W. Diesel and heavy oil concentrations were elevated at 1,340 mg/Kg and 4,930 mg/Kg. No action was taken.

Laboratory Control Sample Recovery – *acceptable*

Laboratory control samples (LCS) were evaluated using 70 to 130 percent per the QA Plan. All NWTPH-Dx LCS/LCSD results provided by OnSite were acceptable.

LCS data provided by Wy'East was acceptable.

Compound Identification

Wy'East's 'heavy oil' standard is motor oil. NWTPH-Dx method indicates that motor oils, hydraulic fluids and similar petroleum products should be identified with the term "lube oil". Heavy fuel oils such as Bunker-C should not be confused with motor oil which falls under the classification of 'lube oils'.

Field Duplicate Sample Analysis

Field duplicate samples were collected and analyzed as follows:

Laboratory SDG	Sample	Field Duplicate
58196	EX-2-150N-45W-4W	EX-2-150N-45W-4WD
58196	EX-2-35N-10W-5W	EX-2-35N-10W-5WD
58526	EX-2-220N-OE-6B	EX-2-220N-OE-6BD
58570	EX-2-10N-115E-4W	EX-2-10N-115E-4WD
58593	EX-2-230N-10W-5B	EX-2-230N-10W-5BD
58668	EX-2-20N-20W-5W	EX-2-20N-20W-5WD
58701	EX-2-20N-10E-5W	EX-2-20N-10E-5WD
58845	EX-2-295N-30W-3W	EX-2-295N-30W-3WD

Work plan advisory goals for precision (35%) were met with the following exceptions:

For Laboratory Number 58196 field duplicate pair EX-2-35N-10W-5W and EX-2-35N-10W-5WD results for 'heavy oil' were 10,000 mg/Kg and 3040 mg/Kg respectively. No action is taken other than to note that these results differ by a factor of 3X indicating major disagreement.

For Laboratory Number 58570 field duplicate pair EX-2-10N-115E-4W and EX-2-10N-115E-4WD results for 'heavy oil' were 760 mg/Kg and 210 mg/Kg respectively. No action is taken other than to note that these results differ by a factor of over 3X indicating major disagreement.

For laboratory 57784 two samples (EX-1-B (2) and EX-1-C (7)) were split with OnSite (0509-184 – samples EX-1-0922-B2 and EX-1-0922-C7 respectively). All sample results for NWTPH-Dx were reported as ND.

INORGANICS - Arsenic

The laboratory (OnSite) provided summary data for arsenic. The items reviewed during validation are summarized below.

Analytical Methods – ***acceptable***

Samples for total metals analysis were prepared and analyzed using EPA Method 200.8.

Sample Holding Times – ***acceptable***

All samples were prepared and analyzed within the recommended holding period from the date of collection; 180 days for metals. All holding time criteria were met.

Laboratory Reporting Limits – ***acceptable***

The laboratory achieved the reporting limits (RLs) required by the QA Plan.

Blank Contamination – ***acceptable***

The method blank was free of target compounds.

Matrix Spike/Matrix Spike Duplicate Analysis

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) analysis was performed with acceptable recoveries. Refer to LCS data for a measure of accuracy.

Duplicate Analysis

Laboratory duplicate analysis was performed with acceptable RPD results.

Data Qualifiers

Data qualifiers applied by the laboratory have been removed from the data summary report sheets and superseded by data validation qualifiers as follows:

The following qualifiers were used to modify the data quality and usefulness of individual analytical results.

U - The constituent was analyzed for, but was not detected above the reported sample quantitation limit.

J - The constituent was positively identified and detected; however, the concentration reported is an estimated value because the result is less than the quantitation limit or quality control criteria were not met.

J- - The constituent was positively identified and detected; however, the concentration reported is an estimated value because the result is less than the quantitation limit, and the result is biased low.

UJ – The constituent was not detected; the associated quantitation limit is an estimated value because quality control criteria were not met.

R – Data are rejected due to significant exceedence of quality control criteria. The analyte may or may not be present. Additional sampling and analysis may be required to determine the presence or absence of the constituent. For statistical reasons, rejected values are not included in the database.

Y – The reporting limit is elevated due to interference. The result is not detected.

Data Assessment

Data review and validation was performed by an experienced quality assurance chemist independent of the analytical laboratory and not directly involved in the project. This is to certify that I have examined the analytical data and based on the information provided to me by the laboratory, in my professional judgment, the data are acceptable for use except where indicated by data qualifiers, which may modify the usefulness of those individual values.

Jessie Compeau

1/8/05
Date

Jessie Compeau
Validator
Informa, LLC

Date

Ted Norton
Project Manager
Senior Environmental Scientist

REFERENCES

EPA 1999, USEPA Contract Laboratory Program, National Functional Guidelines for Organic Data Review, EPA-540/R-99/008, October 1999.

EPA 2002, USEPA Contract Laboratory Program, National Functional Guidelines for Inorganic Data Review, EPA-540-R-02-003, August 2002.

Golder Associates 2005. Draft Compliance Monitoring Plan – City of Moses Lake Maintenance Facility, Moses Lake, Washington. March,, 2005.

ORGANIC DATA VALIDATION SUMMARY

PROJECT NO.: 003-1335-002	SITE: Moses Lake/Mant Facility
LABORATORY: Wy'East, PDX OR	SDG: 57950, 57988, 58116, 58196, 58420 58499 58526 58570 58593 58640 58668 58775 58701 58845
SAMPLES/MATRIX/ANALYSES:	
See attached for Sample ID's.	Soil / NWTPH-Dx NWTPH-Gx/BETX 5035A 8021B/5035A

DATA ASSESSMENT SUMMARY

Review Item	VOA	BNA	PEST PCB	PHOS. PEST	CHLOR. HERB	DIOXIN FURAN	Dx GC	Gx/BTEX GC
1. Data Completeness							M	M
2. Holding Times							O	O
3. GC/MS Tuning							NA	NA
4. Instrument Performance							↓	↓
5. Calibrations								
6. Blanks							O	O
7. Surrogates							M	M
8. MS/MSD							NA	~~NA~~ M
9. Internal Standards								NA
10. Compound Identification								
11. Tent. Ident. Cmpds (TIC)								
12. Result Verification							↓	↓
13. Detection Limits							O	O
14. System Performance							NA	NA
15. Overall Assessment							M	M

O = Data had no problems/or qualified due to minor problems.
M = Data qualified due to major problems.
Z = Data unacceptable.
X = Problems but do not affect data.

Comments/Qualified Results: ~~What~~ 2/16/2006 - submitted via e-mail and fax several questions regarding QA/ac. Due to necessary quick TAT on D.V. report will have to J/UJ qualify all data. If the lab demonstrates acceptable level of precision for Dx, describes surr % recovery procedures, provides acceptable prec/accuracy data for Gx/BETX the most of qualifiers can be 1 re evaluated.

Validated by: Jesse Compean Date: 2/17/2006

Reviewed by: _____ Date: _____

Sample ID's – Wy' East Lab.

57950 (NWTPH-Gx/BTEX and NWTPHDx):

EX-1-Q-6B	EX-1-S-6B	EX-2-140N-150E-3E
EX-1-R-6W	EX-2-90N-100E-3B	

57988 (NWTPH-Gx/BTEX and NWTPHDx):

EX-2-180N-130E-3B	EX-2-180N-70E-3W	EX-2-180N-40E-6B
EX-2-125N-150E-2W	EX-2-140N-100E-4B	
EX-2-190N-135E-2W	EX-2-195N-45E-4W	

OnSite 0510-122 (NWTPH-Gx/BTEX, NWTPHDx, NWTPH-HCID, Volatiles, and Arsenic):

EX-2-80N-5E-7B	EX-2-120N-40W-5B	EX-2-175N-90E-3W
EX-2-80N-45W-7B	EX-2-190-60E-4W	

OnSite 0510-151 (NWTPH-Gx/BTEX, NWTPHDx, and Volatiles):

MW-17	Trip Blank
MW-18	

58116 (NWTPH-Gx/BTEX and NWTPHDx):

EX-2-80N-5E-7B	EX-2-120N-40W-5B	EX-2-175N-90E-3W
EX-2-80N-45W-7B	EX-2-190-60E-4W	

58196 (NWTPH-Gx/BTEX and NWTPHDx):

EX-2-150N-45W-4W	EX-2-125N-60W-4W	EX-2-55N-60W-5W
EX-2-150N-45W-4WD	EX-2-35N-40W-4W	EX-2-55N-60W-6W
EX-2-35N-10W-5W	EX-2-35N-40W-6W	

EX-2-35N-10W-5WD EX-2-90N-60W-5W

58420 (NWTPH-Gx/BTEX and NWTPHDx):

EX-2-10N-30E-4W

58499 (NWTPH-Gx/BTEX and NWTPHDx):

SP-1-200N-40E-C SP-2-ON-40E-C

58526 (NWTPH-Gx/BTEX and NWTPHDx):

EX-2-270N-2E-5W EX-2-240N-15E-5W EX-2-220N-OE-6BD

EX-2-290N-10W-4W EX-2-220N-OE-6B

58570 (NWTPH-Gx/BTEX and NWTPHDx):

EX-2-40N-150E-4W EX-2-10N-115E-4W

EX-2-55N-150E-4W EX-2-10N-115E-4WD

58593 (NWTPH-Gx/BTEX and NWTPHDx):

EX-2-285N-50W-3.5W EX-2-230N-10W-5B

EX-2-240N-25W-4W EX-2-230N-10W-5BD

58640 (NWTPH-Gx/BTEX and NWTPHDx):

EX-2-180N-40W-5W EX-2-170N-30W-5B

58668 (NWTPH-Gx/BTEX and NWTPHDx):

EX-2-20N-20W-5W EX-2-20N-20W-5WD SP-4-40N-160E-C

EX-2-55N-160E-4W SP-3-200N-40W-C

58775 (NWTPH-Gx/BTEX and NWTPHDx):

EX-2-300N-15W-3W **EX-2-335N-25W-3W**

58701 (NWTPH-Gx/BTEX and NWTPHDx):

EX-2-20N-10E-5W **EX-2-20N-10E-5WD**

EX-2-30N-25W-4W **SP-5-20N-15E-C**

58845 (NWTPH-Gx/BTEX and NWTPHDx):

EX-2-295N-30W-3W **EX-2-290N-20W-4B**

EX-2-295N-30W

ORGANIC DATA VALIDATION SUMMARY

Acceptable Yes No

1. Data Completeness (check if present) . . . . . ___ ✓

NO Case narrative
✓ Chain of Custody
✓ Sample Analysis Request
✓ Sample Results
NO Detection Limits NOT For Samples
NO GC/MS Tuning
✓ Initial Calibration Data
✓ Continuing Calibration Data

YES Blank Results
YES Surrogate Results but calculated from MB
YES MS/MSD Results requested but NOT analyzed / ? into lab
NA Internal Standards Performance
✓ Raw Data
✓ Sample Preparation Data
✓ Standards Preparation Data

Comments/Action Taken: Limited Data Review
Several requests for MS/MSD on chains. Data not provided. Awaiting resp
Delay between sample collection and laboratory receipt -
Cooler condition NOT noted

2. Holding Times (check all that apply) . . . . . ✓ ___

___ Unpreserved VOA samples analyzed in 7 days from collection
___ Preserved VOA samples analyzed in 14 days from collection
___ BNA samples extracted in 7 days (14 days soils) from collection
___ BNA extracts analyzed in 40 days from extraction
___ Pest/PCB samples extracted in 7 days (14 days soils) from collection
___ Pest/PCB extracts analyzed in 40 days from extraction

FHCs done on QUICK TAT
D.A NOT reported Assume
D. Reported to be H.T. End

Qualify as estimated (J/UJ) all results analyzed past the holding time limits listed above but within 2x the limit. Qualify detects as estimated (J) and non-detects unusable (UR) for results analyzed greater than 2x the above limits.

Comments/Qualified Results:

10/6,7/05 10/10,11/05 10/18/05 10/24,25/05 11/9/05 11/16/05 11/17,18/05 11/21,22/05 11/22/05 11/30/05

E

10/12/05 10/14/05 10/20/05 10/27/05 11/14/05 11/18/05 11/21/05 11/23/05 11/28/05 12/1/05

all parms

3. GC/MS Tuning . . . . . NA

___ GC/MS tuning performed
___ GC/MS tuning within control limits
___ GC/MS tuning outside control limits (qualify R/UR)

Comments/Qualified Results:

H.T continued

D.S 12/1,2/05 12/2,3/05 12/6/05 12/19/05

D.E

D.R 12/5/05 12/14/05 12/7/05 12/21/05

Note - delay on sample collection to date of receipt at lab. See 1st set of worksheets for more details.
J/UJ NWTPH-Gx/BETX results 57950, 58668, 58593, 58775.

ORGANIC DATA VALIDATION SUMMARY

Acceptable
Yes No

4. Instrument Performance . . . . . NA

__DDT Retention Time Acceptable (packed columns) / Resolution Acceptable (All Columns) [if no, R detects]
__Standard Checks within Retention Time Window [if no, check against expanded windows and if outside, qualify R/UR]
__DDT and/or Endrin Breakdowns >20% [J/UR DDT and Endrin, NJ all breakdown product hits]
__DBC, TCMX or DCBP retention time checks within SOW limits [if no, R/UR]

Comments/Qualified Results: _____

5. Initial and Continuing Calibration . . . . . NA

GC/MS Data
__Initial calibration performed
__Initial calibration RRFs ≥0.05 for all compounds [if no, J/UR]
__Initial calibration RSDs ≤30% for all compounds [if no, J/UJ]
__Continuing calibration performed
__Continuing calibration RRFs ≥0.05 for all compounds [if no, J/UR]
__Continuing calibration %Ds ≤25% for all compounds [if no, J/UJ]
Pesticide/PCB data
__RSD ≤10% for performance checks [if no, J detects]
__All standards analyzed prior to sample analysis, confirmation standards analyzed at proper frequency
__Continuing calibration %D ≤15% for quantitation (≤20% for confirmation) [if no, J all detects]

Comments/Qualified Results: _____

6. Blanks . . . . . ✓ ___

✓ Method blanks analyzed
Common Laboratory Contaminants Detected
__Methylene chloride __Toluene
__Acetone detected __2-Butanone
__Phthalates detected [list or attach summary sheet] _____
__TICs detected [list or attach summary sheet] _____
Qualify sample results <10x above as U at SQL
Non-common Laboratory Contaminants
__Other TCL compounds detected [list or attach summary sheet] _____
Qualify sample results <5x above as U at SQL

Comments/Qualified Results: BETX quant limits range from 0.04, 1, 2 mg/kg. D.F NOT reported anywhere.

A
57803

ORGANIC DATA VALIDATION SUMMARY

Acceptable
Yes No

7. Surrogates. . . . . — X

Note: Surrogate limits apply if at least one volatile or pesticide/PCB surrogate is out of specification and at least two semivolatile surrogates are out of specification.

✓ Surrogates analyzed
__ Surrogate recoveries within method control limits
__ Surrogate recoveries above method control limits (J detects only)
__ Surrogate recoveries below method control limits but ≥10% (J/UJ)
__ Surrogate recoveries below 10% (J/UR)

Refer to 57950
58420 NO action on this based
*58526 - P4481 NO surr due to elevated hi/7

Surrogates NOT reported w/ any of the blanks. Wy'East indicate % R calculated from Blank result (matrix or reagent blank) this applies to NWTPH-~~Dx~~ Gx Not sure how surr calculated in Gx, BETX instances.

Jen 2/20/06

8. Matrix Spike/Matrix Spike Duplicate . . . . . —

See comment a) + b) b) Some LCS data provided. Pending request
__ MS/MSD analyzed
__ MS/MSD recoveries within method control limits
__ MS/MSD recoveries above method control limits (J detects only)
__ MS/MSD recoveries below method control limits but ≥10% (J/UJ)
__ MS/MSD recoveries below 10% and surrogates are out (J/UR)

Dx LCS 57950 from lab for additional data.
58420

NWTPH Gx

Comments/Qualified Results: a) NO MS/MSD provided for BETX although it was requested on chain for (58196, 58526, 58570, 58640, 58668, 58701 and 58845). Request submitted to Wy East for this data. Pending Response. 5 Spike % R high

9. Internal Standards Performance . . . . . NA

__ Internal standards added to all samples and QC
__ Internal standard areas within control limits
__ Internal standard areas outside control limits but greater than 10% (J/UJ)
__ Internal standard areas are zero or less than 10% (J/UR)
__ Internal standard RTs within ±30 second windows (if no, J/UJ)

Comments/Qualified Results: ✓ 58526, 58570, 58640, 58668, 58845
See supplemental data. Not sure how %R calculated. Pending response from lab.

10. Compound Identification . . . . . NA

__ Library search data provided for positive results (if no and data is required, request from the laboratory)
__ Positive results within RT criteria for dual column confirmation (Pesticide/PCB data only) (if no, qualify detects as U)
__ Compound ID within ±0.06 RRT of standard (if no, qualify as J if spectral match okay)
__ Mass spectral match acceptable (if no, qualify as R)

Comments/Qualified Results: _____

ORGANIC DATA VALIDATION SUMMARY

Acceptable Yes No

11. Tentatively Identified Compounds (TIC) . . . . . N/A

__TIC's searched (10/20 largest non-Aldol VOA's/Semi-VOA's)
__TIC's identified properly
__TIC's present in blank and samples (qualify according to 5x rule)
__Common laboratory contaminants reported as TIC's (qualify the following as rejected [CO_2 (m/z 44), siloxanes (m/z 73), diethyl ether, hexane, freons, phthalates <100 ug/L or <4000 ug/Kg, cyclohexene derivatives, aldols or hydroxy ketones and hydroxy aldehydes])
__Qualify valid TICs as JN

Comments/Qualified Results:_____

12. Result Verification . . . . . N/A

__All results supported in raw data
__Transcription errors identified (note constituent(s) and changes below)
__Calculation errors identified (note constituent(s) and changes below)

Comments/Qualified Results:_____

13. Detection Limits . . . . . See note below.

__Sample quantitation limits (SQLs) meet the project requirements (note discrepancies below)

Comments/Qualified Results: Results Reported as ND when NOT detected at or above R.L. Dry ~~wt~~ Weight requested to see what dry wt R.L. would be
D.F. NOT reported lab verbally indicate ~~Dfs~~ was not done - ? questionable (No action taken here).

14. System Performance . . . . . N/A

__Baseline anomalies noted which affect quantitation (J/UJ)
__High background MS levels noted which affect quantitation (J/UJ)
__Extraneous or coeluting peaks effecting quantitation (J/UJ)
__Poor resolution (J/UJ)
__Peak tailing/peak splitting affecting quantitation (J/UJ)

Comments/Qualified Results:_____

ORGANIC DATA VALIDATION SUMMARY

15. Overall Assessment

Comments/Qualified Results: – Cooler temps NOT reported 1–5 day delay between sample collection + lab receipt. Qualify those greater than 48 hours (see page 2 for details)

– ND results reported as 'ND' respective R.L. NOT shown. Requested Dry wts from lab for this purpose. Some dry wts NOT measured as samples deemed 'clean' by lab. No action on this basis since RL is NOT Sign. Charged until % solids is 40%! Most % solids were 70% +

– surrs apparently calculated from MB. This is atypical. (this for diesel). Degradation of surrs std in issue No quals on this basis.

– NO QC for WTPHGx/BTEX although requested.

Poor agreement between field dups EX-2-35N-10W-5W/5WD 10,000 + 3040 for oil, ND + 38 for diesel

EX-2-10N-115E-4W / 4WD | 760 / ND | 210 / ND for oil, diesel | ISSues for BETX

see attached

3W / EX-2-295N-30W-3WD] poor agreement for BTEX

– Close to minimal amount of QC on WTPHDx. Some of field dups poor agreement. See attached.

No action since NO quals on this basis.

No precision data for 57950, 57988, 58116, 58450, 58499, 58640, 58775. J qualify all + hits for NWTPH-Dx, Gx, BETX.

Duplicate or split sample ID	Lab	Report	Sample Date	Oil (ppm)	Diesel (ppm)	Gas (ppm)	B (ppb)	T (ppb)	E (ppb)	X (ppb)
EX-1-B(2)	Wy East	57784	9/26/05	< 100	< 25	< 0.25	< 2	< 2	< 2	< 2
EX-1-C(7)	Wy East	57784	9/26/05	< 100	< 25	< 0.25	< 2	< 2	< 2	< 2
EX-2-150N-45W-4WD	Wy East	58196	10/24/05	6830	< 25	37	< 40	< 40	260	370
EX-2-35N-10W-5WD	Wy East	58196	10/24/05	3040	38	< 20	< 40	< 40	< 40	< 40
EX-2-220N-0E-6BD	Wy East	58526	11/18/05	< 100	< 25	< 20	< 40	< 40	< 40	< 40
EX-2-10N-115E-4WD	Wy East	58570	11/21/05	210	< 25	< 20	< 40	< 40	< 40	< 40
EX-2-230N-10W-5BD	Wy East	58593	11/23/05	< 100	< 25	< 20	< 40	< 40	< 40	< 40
EX-2-20N-20W-5WD	Wy East	58668	12/2/05	< 100	< 25	< 20	< 40	< 40	< 40	40
EX-2-20N-10E-5WD	Wy East	58701	12/6/05	< 100	< 25	< 20	< 40	< 40	< 40	< 40
EX-2-295N-30W-3WD	Wy East	58845	12/19/05	129	< 25	< 20	< 40	190	40	200

Primary sample ID	Lab	Report	Sample Date	Oil (ppm)	Diesel (ppm)	Gas (ppm)	B (ppb)	T (ppb)	E (ppb)	X (ppb)
EX-1-0922-B2	On-Site	0509-184	9/22/05	< 67	< 33	< 5.6	< 20	< 56	< 56	< 56
EX-1-0922-C7	On-Site	0509-184	9/22/05	< 67	< 33	< 5.6	< 20	< 56	< 56	< 56
EX-2-150N-45W-4W	Wy East	58196	10/24/05	7250	< 25	< 20	< 40	< 40	< 40	< 40
EX-2-35N-10W-5W	Wy East	58196	10/24/05	10000	< 25	< 20	< 40	< 40	< 40	< 40
EX-2-220N-0E-6B	Wy East	58526	11/18/05	< 100	< 25	< 20	< 40	< 40	< 40	< 40
EX-2-10N-115E-4W	Wy East	58570	11/21/05	760	< 25	< 20	< 40	< 40	< 40	< 40
EX-2-230N-10W-5B	Wy East	58593	11/23/05	< 100	< 25	< 20	< 40	< 40	< 40	< 40
EX-2-20N-20W-5W	Wy East	58668	12/2/05	< 100	< 25	< 20	< 40	40	< 40	170
EX-2-20N-10E-5W	Wy East	58701	12/6/05	< 100	< 25	< 20	< 40	< 40	< 40	< 40
EX-2-295N-30W-3W	Wy East	58845	12/19/05	< 100	< 25	< 20	< 40	< 40	< 40	< 40

WyEast calculates "dry weight percent" for DX and GX samples containing contamination. Moisture percent = 100%-DW%. For clean samples, dry weight correction of results is not applicable. Therefore, for some clean samples, DW% was not calculated. (Denoted by N/A)

Report #	Lab ID#	DW%
57784	P1821	N/A
↓	P1822	N/A
↓	P1823	N/A
↓	P1824	N/A
57803	P1896	86%
↓	P1897	84%
↓	P1898	81%
↓	P1899	81%
↓	P1900	82%
↓	P1901	84%
↓	P1902	82%
↓	P1903	78%
57851	P2186	83%
↓	P2187	83%
↓	P2188	92%
↓	P2189	84%
↓	P2190	81%
↓	P2191	81%
↓	P2192	82%
↓	P2193	77%
57852	P2194	83%
↓	P2195	81%
↓	P2196	84%
↓	P2197	80%
↓	P2198	77%
↓	P2199	82%
↓	P2200	83%
↓	P2201	80%
↓	P2202	81%
↓	P2203	80%
↓	P2204	80%
↓	P2205	78%
57892	P2332	86%
↓	P2333	85%
↓	P2334	86%
↓	P2335	96%
↓	P2336	79%
↓	P2337	76%
↓	P2338	57%
↓	P2339	81%
57931	P2535	71%
↓	P2536	75%
↓	P2537	71%
↓	P2538	76%
↓	P2539	80%
↓	P2540	86%
↓	P2541	92%
57950	P2592	81%
↓	P2593	83%
↓	P2594	76%
↓	P2595	81%
↓	P2596	78%

Report #	Lab ID#	DW%
57988	P2707	72%
↓	P2708	82%
↓	P2709	82%
↓	P2710	85%
↓	P2711	76%
↓	P2712	78%
↓	P2713	70%
58116	P3071	N/A
↓	P3072	N/A
↓	P3073	N/A
↓	P3074	N/A
↓	P3075	N/A
58196	P3376	81%
↓	P3377	85%
↓	P3378	58%
↓	P3379	47%
↓	P3380	71%
↓	P3381	86%
↓	P3382	72%
↓	P3383	72%
↓	P3384	88%
↓	P3385	72%
58420	P4114	84%
58499	P4393	90%
↓	P4394	85%
58526	P4480	81%
↓	P4481	79%
↓	P4482	89%
↓	P4483	70%
↓	P4484	70%
58570	P4614	83%
↓	P4615	80%
↓	P4616	87%
↓	P4617	81%
58593	P4715	N/A
↓	P4716	N/A
↓	P4717	N/A
↓	P4718	N/A
58668	P4929	86%
↓	P4930	80%
↓	P4931	83%
↓	P4932	80%
↓	P4933	59%
58640	P4851	80%
↓	P4852	76%
58701	P5014	80%
↓	P5015	86%
↓	P5016	78%
↓	P5017	89%
58775	P5263	91%
↓	P5264	88%

from 2/16/2006 fax

58845 P5535 65%

36

37

missing 58845

Report nbe

WyEast
Environmental Sciences, Inc.

Research & Laboratory Services

CHAIN OF CUSTODY

2415 SE 11th Ave. • Portland, Oregon 97214 • (503) 231-9320 • FAX (503) 231-9344

PROJECT # 033-1335-002	PROJECT NAME / SITE Moses Lake NF	STATE WA	PURCHASE ORDER #
COMPANY Golder	REPORT ATTENTION Steven VanShaar	PHONE NUMBER 206-617-6125	FAX NUMBER 509-766-3615
SAMPLES COLLECTED BY SRV	DATE(S) COLLECTED 10/6/05, 10/7/05	TIME(S) COLLECTED —	SAMPLES CHILLED TO 4° C?
PRESERVATIVE USED? (HCl, etc.)			Regular ☐ 3-5 Days ☐ Same day

FIELD ID	MEDIA	CONTAINER	~~VOLUME ETC~~ Date/Time	ANALYSIS REQUIRED	LAB ID
EX-1-Q-6B	S	2	10/6 18:00	NWTPH-Gx/BTEX, NWTPH-Dx	P2592
EX-1-R-6W			18:10		P2593
EX-1-S-6B			18:20		P2594
EX-2-90N-100E-3B			10/7 14:50		P2595
EX-2-140N-150E-3B			10/6 16:00		P2596

RELINQUISHED BY Steven VanShaar	DATE / TIME 10/7/05 @ 16:00	RECEIVED BY	DATE / TIME
RELINQUISHED BY	DATE / TIME	RECEIVED BY LAB Ellen Wells	DATE / TIME 10/10/05 @ 8:45

Submission of samples with testing requirements to WyEast Environmental Sciences will be understood to be an agreement for services in accordance with the conditions listed on the back of the client copy

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NW-TPHDx Quality Control Report

Batch ID: Dx-051010-A1
Batch Date: 10/10/05

Blank Quality Control

	Sample ID	Result (mg/Kg)	Acceptable Result	Surrogate Recovery	Acceptable Surrogate Recovery
Reagent Blank	LRB	0	<10 mg/Kg	63%	50%-150%
Matrix Blank	SBlank1	0	<10 mg/Kg	66%	50%-150%

Spike Quality Control

	Sample ID	Theoretical Spike Result (mg/Kg)	Spiked Sample Result (mg/Kg)	Spike Recovery %	Acceptable Spike Recovery%
Matrix Spike	LCS1	158	140	89%	70%-130%

Continuing Calibration Quality Control

Analyte	Sample ID	Continuing C.f.	5 point C.f.	Percent Difference	Acceptable Range
Diesel	CCVD	24.3	40.5	-40%	± 15%
Heavy Oil	CCVO	11.7	15.3	-23%	± 15%

Continuing Calibration does not meet QC standards this run.
Corrective Action has been taken.

2415 SE 11th Ave., Portland, Oregon 97214 Phone (503) 231-9320 FAX (503) 231-9344

Report Number [illegible]

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PROJECT # 033-1335-002	PROJECT NAME / SITE Moses Lake MF	STATE WA	PURCHASE ORDER #
COMPANY Golder	REPORT ATTENTION Steven VanGhaar	PHONE NUMBER 206-617-6125	FAX NUMBER 509-766-3615
SAMPLES COLLECTED BY SRV	DATE(S) COLLECTED 10/10/05, 10/11/05	TIME(S) COLLECTED	SAMPLES CHILLED TO 4° C?
PRESERVATIVE USED? (HCl, etc.)			Regular ☐ 3-5 Days ☐

FIELD ID	MEDIA	CONTAINER	VOLUME ETC	ANALYSIS REQUIRED	LAB ID
EX-2-180N-130E-3B	S	2	10/10 15:10	NWTPH-Gx/BTEX, NWTPH-Dx	P2707
EX-2-125N-150E-2W			15:20		P2708
EX-2-190N-135E-2W			15:30		P2709
EX-2-180N-70E-3W			15:40		P2710
EX-2-140N-100E-4B			15:50		P2711
EX-2-195N-45E-4W			10/11 10:30		P2712
EX-2-180N-40E-6B			13:00		P2713

RELINQUISHED BY	DATE / TIME 10/11/05 15:30	RECEIVED BY	DATE / TIME
RELINQUISHED BY	DATE / TIME	RECEIVED BY LAB [signature]	DATE / TIME 10/12/05 9:30

Submission of samples with testing requirements to WyEast Environmental Sciences will be understood to be an agreement for services in accordance with the conditions listed on the back of the client copy

Report Number: 1 58114

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PROJECT #	PROJECT NAME / SITE	STATE	PURCHASE ORDER #
033-1335-002	Moses Lake NF	WA	
COMPANY	**REPORT ATTENTION**	**PHONE NUMBER**	**FAX NUMBER**
Golder	Steven VanShaar	9206-617-6125	509-766-3645
SAMPLES COLLECTED BY	**DATE(S) COLLECTED**	**TIME(S) COLLECTED**	**SAMPLES CHILLED TO 4° C?**
SRV	10/18/05		
PRESERVATIVE USED? (HCl, etc.)			Regular ☐ 3-5 Days ☐ Same Day

FIELD ID	MEDIA	CONTAINER	~~VOLUME ETC~~ Date Time	ANALYSIS REQUIRED	LAB ID
Highest Priority EX-2-80N-5E-7B	S	2	10/18 1430	NWTPH-Dx ~~BTEX~~ NWTPH-Gx/BTEX	P3071
EX-2-80N-45W-7B	|	|	1440	|	P3072
EX-2-120N-40W-5B	|	|	1450	|	P3073
EX-2-190N-60E-4W	|	|	1500	|	P3074
EX-2-175N-90E-3W	|	|	1510	|	P3075

RELINQUISHED BY	DATE / TIME	RECEIVED BY	DATE / TIME
Steven VanShaar	10/18/05 1630		
RELINQUISHED BY	**DATE / TIME**	**RECEIVED BY LAB**	**DATE / TIME**
		[signature]	10/20/05 0935

Submission of samples with testing requirements to WyEast Environmental Sciences will be understood to be an agreement for services in accordance with the conditions listed on the back of the client copy

ort nbe

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Research & Laboratory Services

CHAIN OF CUSTODY

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PROJECT # 033-1335-002	PROJECT NAME / SITE Moses Lake MF	STATE WA	PURCHASE ORDER #
COMPANY Golder	REPORT ATTENTION Steve VanShaar	PHONE NUMBER 206-617-6125	FAX NUMBER Same as previous (509-)
SAMPLES COLLECTED BY SRV	DATE(S) COLLECTED 10/24 - 10/25/05	TIME(S) COLLECTED	SAMPLES CHILLED TO 4° C?
PRESERVATIVE USED? (HCl, etc.)			Regular ☒ 24-hr (No rush) 3-5 Days ☐

FIELD ID	MEDIA	CONTAINER	~~VOLUME ETC~~ Date/Time	ANALYSIS REQUIRED	LAB ID
EX-2-150N-45W-4W	S	2	10/24 0920	NWTPH-Dx, NWTPH-Gx/BTEX	P3376
EX-2-150N-45W-4WD			0920		P3377
EX-2-35N-10W-5W			1100		P3378
EX-2-35N-10W-5WD			1100		P3379
EX-2-125N-60W-4W			10/25 1000		P3380
EX-2-35N-40W-4W			1120		P3381
EX-2-35N-40W-6W			1150		P3382
EX-2-90N-60W-5W		3	1200	MS/MSD	P3383
EX-2-55N-60W-5W		2	1210		P3384
EX-2-55N-60W-6W		3	1220	MS/MSD	P3385
				MS/MSD = Matrix spike/Matrix spike duplicate	

RELINQUISHED BY Steven VanShaar	DATE / TIME 10/25/05 1600	RECEIVED BY	DATE / TIME
RELINQUISHED BY	DATE / TIME	RECEIVED BY LAB Debbie Miller	DATE / TIME 10/26/05 @ 10:00

Submission of samples with testing requirements to WyEast Environmental Sciences will be understood to be an agreement for services in accordance with the conditions listed on the back of the client copy

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Report Number: 58420

Wy'East
Environmental Sciences, Inc.

Research & Laboratory Services

CHAIN OF CUSTODY

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PROJECT # 033-1335-004	PROJECT NAME / SITE Moses Lake MF	STATE WA	PURCHASE ORDER #
COMPANY Golder	REPORT ATTENTION Steven VanShaar	PHONE NUMBER 206-617-6125	FAX NUMBER 425-882-5498
SAMPLES COLLECTED BY VanShaar	DATE(S) COLLECTED 11/9	TIME(S) COLLECTED	SAMPLES CHILLED TO 4° C?
PRESERVATIVE USED? (HCl, etc.)			Regular ☒ 24-hr (not same day) 3-5 Days ☐

FIELD ID	MEDIA	CONTAINER	~~VOLUME ETC~~ Date/Time	ANALYSIS REQUIRED	LAB ID
EX-2-10N-30E-4W	S	2	11/9 1530	NWTPH-Dx, NWTPH-Gx/BTEX	P4114

RELINQUISHED BY Steven VanShaar	DATE / TIME 11/10/05 1600	RECEIVED BY	DATE / TIME
RELINQUISHED BY	DATE / TIME	RECEIVED BY LAB Debbie Purcell	DATE / TIME 11/11/05 @ 8:45

Submission of samples with testing requirements to WyEast Environmental Sciences will be understood to be an agreement for services in accordance with the conditions listed on the back of the client copy

NW-TPHDx Quality Control Report

Batch ID: Dx-051111-A1
Batch Date: 11/11/05

Blank Quality Control

	Sample ID	Result (mg/Kg)	Acceptable Result	Surrogate Recovery	Acceptable Surrogate Recovery
Reagent Blank	LRB	0	<10 mg/Kg	92%	50%-150%
Matrix Blank	SBlank1	0	<10 mg/Kg	114%	50%-150%

Spike Quality Control

	Sample ID	Theoretical Spike Result (mg/Kg)	Spiked Sample Result (mg/Kg)	Spike Recovery %	Acceptable Spike Recovery%
Matrix Spike	LCS1	157	165	105%	70%-130%

Continuing Calibration Quality Control

Analyte	Sample ID	Continuing C.f.	5 point C.f.	Percent Difference	Acceptable Range
Diesel	CCVD	35.7	40.5	-12%	± 15%
Heavy Oil	CCVO	14.4	15.3	-6%	± 15%

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CHAIN OF CUSTODY

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PROJECT # 033-1335-004	PROJECT NAME / SITE Moses Lake MF	STATE WA	PURCHASE ORDER #
COMPANY Golder	REPORT ATTENTION Steven VanVaar	PHONE NUMBER 206-617-6125	FAX NUMBER 509-766-3615
SAMPLES COLLECTED BY SRV	DATE(S) COLLECTED 11/16/05	TIME(S) COLLECTED	SAMPLES CHILLED TO 4° C?
PRESERVATIVE USED? (HCl, etc.)			Regular ☐ (24-hr) 3-5 Days ☐

FIELD ID	MEDIA	CONTAINER	~~VOLUME ETC~~ Time	ANALYSIS REQUIRED	LAB ID
SP-1-200N-40E-C	S	2	1420	NWTPH-Dx, NWTPH-Gx/BTEX	P4393
SP-2-0N-40E-C	1	1	1430	1 / 1	P4394

RELINQUISHED BY Steven VanVaar	DATE / TIME 11/16/05 1530	RECEIVED BY	DATE / TIME
RELINQUISHED BY	DATE / TIME	RECEIVED BY LAB	DATE / TIME 11/17/05 9:55 AM

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58499

NW-TPHDx Quality Control Report

Batch ID: Dx-051117-C1
Batch Date: 11/17/05

Blank Quality Control

	Sample ID	Result (mg/Kg)	Acceptable Result	Surrogate Recovery	Acceptable Surrogate Recovery
Reagent Blank	LRB	0	<10 mg/Kg	120%	50%-150%
Matrix Blank	SBlank1	0	<10 mg/Kg	86%	50%-150%

Spike Quality Control

	Sample ID	Theoretical Spike Result (mg/Kg)	Spiked Sample Result (mg/Kg)	Spike Recovery %	Acceptable Spike Recovery%
Matrix Spike	LCS1	151	157	104%	70%-130%

Continuing Calibration Quality Control

Analyte	Sample ID	Continuing C.f.	5 point C.f.	Percent Difference	Acceptable Range
Diesel	CCVD	6451.3	7223.7	-11%	± 15%
Heavy Oil	CCVO	3514.8	3639.1	-3%	± 15%

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PROJECT # 033-1335-004	PROJECT NAME / SITE Moses Lake MF	STATE WA	PURCHASE ORDER #
COMPANY Golder	REPORT ATTENTION Steven VanShaar	PHONE NUMBER 206-617-6125	FAX NUMBER 509-760-3615
SAMPLES COLLECTED BY SRV	DATE(S) COLLECTED 11/17 - 11/18	TIME(S) COLLECTED	SAMPLES CHILLED TO 4° C?
PRESERVATIVE USED? (HCl, etc.)			Regular ☐ 3-5 Days ☐ Same Day

FIELD ID	MEDIA	CONTAINER	~~VOLUME ETC~~ Date/Time	ANALYSIS REQUIRED	LAB ID
EX-2-270N-2E-5W	S	2	11/18 1410	NWTPH-Dx, NWTPH-Gx/BTEX	P4480
EX-2-290N-10W-4W	|	2	11/18 1420	|	P4481
EX-2-240N-15E-5W	|	3	11/17 1300	MS/MSD	P4482
EX-2-220N-0E-6B	|	2	11/18 1050	|	P4483
EX-2-220N-0E-6BD	|	2	11/18 1050	|	P4484

RELINQUISHED BY Steven VanShaar	DATE / TIME 11/18/05 1530	RECEIVED BY	DATE / TIME
RELINQUISHED BY	DATE / TIME	RECEIVED BY LAB Lisa Nelle	DATE / TIME 11/18/05 1945

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PROJECT # 033-1335-004	PROJECT NAME / SITE Moses Lake MF	STATE WA	PURCHASE ORDER #
COMPANY Golder	REPORT ATTENTION Steven VanShaar	PHONE NUMBER 206-617-6125	FAX NUMBER 509-766-3615
SAMPLES COLLECTED BY SRV	DATE(S) COLLECTED 11/21 - 11/22	TIME(S) COLLECTED	SAMPLES CHILLED TO 4° C?
PRESERVATIVE USED? (HCl, etc.)			Regular ☐ 3-5 Days ☐ Same day

FIELD ID	MEDIA	CONTAINER	~~VOLUME ETC~~ date/time	ANALYSIS REQUIRED	LAB ID
EX-Z-40N-150E-4W	S	2	11/22 1240	NWTPH-Dx, NWTPH-Gx/BTEX	P4614
EX-Z-55N-150E-4W	S	3	11/22 1500	MS/MSD	P4615
EX-Z-10N-115E-4W	S	2	11/21 1630		P4616
EX-Z-10N-115E-4WD	S	2	11/21 1630		P4617

RELINQUISHED BY Steven VanShaar	DATE / TIME 11/22/05 16:15	RECEIVED BY	DATE / TIME
RELINQUISHED BY	DATE / TIME	RECEIVED BY LAB Dawn Nell	DATE / TIME 11/23/05 9:40

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PROJECT #	PROJECT NAME / SITE	STATE	PURCHASE ORDER #
033 1335-004	Moses Lake MF	WA	
COMPANY	**REPORT ATTENTION**	**PHONE NUMBER**	**FAX NUMBER**
Golder	Steven VanShaar	206-617-6125	509-766-3615
SAMPLES COLLECTED BY	**DATE(S) COLLECTED**	**TIME(S) COLLECTED**	**SAMPLES CHILLED TO 4° C?**
SRV	11/22, 11/23		
PRESERVATIVE USED? (HCl, etc.)			Regular ☐ Same day ☐ 3-5 Days ☐

FIELD ID	MEDIA	CONTAINER	~~VOLUME ETC~~ Date / Time	ANALYSIS REQUIRED	LAB ID
EX-2-285N-50W-3.5W	S	2	11/22 1645	NWTPH-Dx, NWTPH-Gx/BTEX	84715
EX-2-240N-25W-4W	|	|	11/23 1280	|	84716
EX-2-230N-10W-5B	|	|	11/23 1200	|	84717
EX-2-230N-10W-5BD	|	|	11/23 1210	|	84718

RELINQUISHED BY	DATE / TIME	RECEIVED BY	DATE / TIME
Steven VanShaar	11/23/05 1400		
RELINQUISHED BY	**DATE / TIME**	**RECEIVED BY LAB**	**DATE / TIME**
		[signature]	11/28/05

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PROJECT # 033-1335-004	PROJECT NAME / SITE Moses Lake MF	STATE WA	PURCHASE ORDER #
COMPANY Golder	REPORT ATTENTION Steven VanShaar	PHONE NUMBER 206-617-6125	FAX NUMBER 509-766-3615
SAMPLES COLLECTED BY SRV	DATE(S) COLLECTED 11/30	TIME(S) COLLECTED	SAMPLES CHILLED TO 4° C?
PRESERVATIVE USED? (HCl, etc.)			Regular ☐ 3-5 Days ☐ Same Day

FIELD ID	MEDIA	CONTAINER	~~VOLUME~~ Time ETC	ANALYSIS REQUIRED	LAB ID
EX-2-180N-40W-5W	S	3	1440	NWTPH-Dx, NWTPH-Gx/BTEX, MS/MSD	P48S1
EX-2-170N-30W-5B	S	2	1450	" " "	P48S2

RELINQUISHED BY Steven VanShaar	DATE / TIME 11/30/05 1600	RECEIVED BY	DATE / TIME
RELINQUISHED BY	DATE / TIME	RECEIVED BY LAB	DATE / TIME 12/1/05 9:35 AM

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PROJECT #	PROJECT NAME / SITE	STATE	PURCHASE ORDER #
033-1335-004	Moses Lake NF	WA	
COMPANY	**REPORT ATTENTION**	**PHONE NUMBER**	**FAX NUMBER**
Golder	Steven VanShaar	206 617 6125	509 766 3615
SAMPLES COLLECTED BY	**DATE(S) COLLECTED**	**TIME(S) COLLECTED**	**SAMPLES CHILLED TO 4° C?**
VanShaar	12/1 12/2		
PRESERVATIVE USED? (HCl, etc.)			Regular ☐ 3-5 Days ☐ Same Day

FIELD ID	MEDIA	CONTAINER	VOLUME ETC (Date + Time)	ANALYSIS REQUIRED	LAB ID
EX-2-20N-20W-5W	S	2	12/2 1120	NWTPH-Dx, NWTPH-Gx/BTEX 5035A	P4929
EX-2-055N-160E-4W	|	2	12/1 1600	| | MS/MSD	P4930
EX-2-20N-20W-5WD	|	2	12/2 1120	| | ↓	P4931
SP-3-200N-40W-C	|	2	12/2 1220	| |	P4932
SP-4-40N-160E-C	|	2	12/2 1230	| |	P4933

RELINQUISHED BY	DATE / TIME	RECEIVED BY	DATE / TIME
Steven VanShaar	12/2/05 1400		
RELINQUISHED BY	DATE / TIME	RECEIVED BY LAB	DATE / TIME
		[signature] 12/5/05	10:30

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PROJECT # 033-1335-004	PROJECT NAME / SITE Moses Lake MF	STATE WA	PURCHASE ORDER #
COMPANY Golder	REPORT ATTENTION Steven VanShaar	PHONE NUMBER 206 617 6125	FAX NUMBER 509-766-3615
SAMPLES COLLECTED BY SRV	DATE(S) COLLECTED 12/2 - 12/3	TIME(S) COLLECTED	SAMPLES CHILLED TO 4° C?
PRESERVATIVE USED? (HCl, etc.)			Regular ☐ Same Day 3-5 Days ☐

FIELD ID	MEDIA	CONTAINER	VOLUME ETC	ANALYSIS REQUIRED	LAB ID
EX-2-300N-15W-3W	S	2		NWTPH-Dx, NWTPH-Gx/BTEX	PS263
EX-2-335N-25W-3W	S	2		" " "	PS264

RELINQUISHED BY Steven VanShaar	DATE / TIME 12/13/05 1500	RECEIVED BY	DATE / TIME
RELINQUISHED BY	DATE / TIME	RECEIVED BY LAB	DATE / TIME 12/14/05 9:45

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PROJECT # 033-1335-004	PROJECT NAME / SITE Moses Lake MF	STATE WA	PURCHASE ORDER #
COMPANY Golder	REPORT ATTENTION Steven VanShaar	PHONE NUMBER 206-617-6125	FAX NUMBER 509-766-3615
SAMPLES COLLECTED BY SRV	DATE(S) COLLECTED 12/6/05	TIME(S) COLLECTED	SAMPLES CHILLED TO 4° C?
PRESERVATIVE USED? (HCl, etc.)			Regular ☐ 3-5 Days ☐ Same Day

FIELD ID	MEDIA	CONTAINER	~~VOLUME ETC~~ Time	ANALYSIS REQUIRED	LAB ID
EX-2-20N-10E-5W	S	2	1230	NWTPH-Dx, NWTPH-Gx/BTEX	PS014
EX-2-30N-25W-4W	"	3	1140	" MS/MSD	PS015
EX-2-20N-10E-5W.D	"	2	1230	"	PS016
SP-5-20N-15E-C	"	2	1440	"	PS017

RELINQUISHED BY Steven VanShaar	DATE / TIME 12/6/05 1600	RECEIVED BY	DATE / TIME
RELINQUISHED BY	DATE / TIME	RECEIVED BY LAB Debra Nelle	DATE / TIME 12/7/05 9:30

Submission of samples with testing requirements to WyEast Environmental Sciences will be understood to be an agreement for services in accordance with the conditions listed on the back of the client copy

Report Number: L5534

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PROJECT # 033-1335-004	PROJECT NAME / SITE Moses Lake MF	STATE WA	PURCHASE ORDER #
COMPANY Golder	REPORT ATTENTION Steven VanShaar	PHONE NUMBER 206-617-6125	FAX NUMBER 509-766-3615
SAMPLES COLLECTED BY SRV	DATE(S) COLLECTED 12/1/9	TIME(S) COLLECTED ~~1160~~ 1410 - 1430	SAMPLES CHILLED TO 4° C?
PRESERVATIVE USED? (HCl, etc.)			Regular ☐ Same Day 3-5 Days ☐

FIELD ID	MEDIA	CONTAINER	VOLUME ETC	ANALYSIS REQUIRED	LAB ID
EX-Z-295N-30W-3W	S	2		NWTPH-Dx, NWTPH-Gx/BTEX	P5535
EX-Z-295N-30W-3WD	S	2		" "	P5536
EX-Z-290N-20W-4B	S	3		MS/MSD	P5537

RELINQUISHED BY Steven VanShaar	DATE / TIME 12/19/05 1530	RECEIVED BY	DATE / TIME
RELINQUISHED BY	DATE / TIME	RECEIVED BY LAB	DATE / TIME 12/2/05 1:20 PM

Submission of samples with testing requirements to WyEast Environmental Sciences will be understood to be an agreement for services in accordance with the conditions listed on the back of the client copy

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ORGANIC DATA VALIDATION SUMMARY

PROJECT NO.: 003-1335-002	SITE: Moses Lake Mount Equity
LABORATORY: OnSite Environmental Redmond WA	SDG: 0509-184, 0510-122, 0510-151
SAMPLES/MATRIX/ANALYSES:	
See attached / soil + water	See attached VOC by EPA 8260B NWTPH Dx by WA State NWTPH Gx / BTEX 5035A / WA State

DATA ASSESSMENT SUMMARY NWTPH-HCID / WA State

Review Item	VOA	BNA	PEST PCB	PHOS. PEST	CHLOR. HERB	DIOXIN FURAN	GC DX	GC GX/BETX
1. Data Completeness	O						O	O
2. Holding Times	O						O	O
3. GC/MS Tuning	NA						NA	NA
4. Instrument Performance	↓						↓	↓
5. Calibrations	↓						↓	↓
6. Blanks	O						O	O
7. Surrogates	O						O	O
8. MS/MSD SB/SBD	O						NA	O
9. Internal Standards	NA						NA	NA
10. Compound Identification	NA						↓	↓
11. Tent. Ident. Cmpds (TIC)	NA							
12. Result Verification	NA						↓	↓
13. Detection Limits	D						O	O
14. System Performance	NA						NA	NA
15. Overall Assessment	O						O	O

O = Data had no problems/or qualified due to minor problems.
M = Data qualified due to major problems.
Z = Data unacceptable.
X = Problems but do not affect data.

Comments/Qualified Results: _____

Validated by: Jodi Compeau Date: 2/17/2006.

Reviewed by: _____ Date: _____

OnSite 0509-184 (NWTPH-Gx/BTEX and NWTPHDx):

EX-1-0922-A5 ✓ **EX-1-0922-C7** ✓ soil

EX-1-0922-B2 ✓

OnSite 0510-122 (NWTPH-Gx/BTEX, NWTPHDx, NWTPH-HCID, Volatiles, and Arsenic):

~~**EX-2-80N-5E-7B**~~ ~~**EX-2-120N-40W-5B**~~ ~~**EX-2-175N-90E-3W**~~

~~**EX-2-80N-45W-7B**~~ ~~**EX-2-190-60E-4W**~~

EX-1-GW-101705
CF3-101705

Jan 2/17/06

Soil
H2O

OnSite 0510-151 (NWTPH-Gx/BTEX, NWTPHDx, and Volatiles):

MW-17 **Trip Blank**

MW-18

water

ORGANIC DATA VALIDATION SUMMARY

Acceptable Yes / No

1. Data Completeness (check if present) . . . . . ✓ ___

___Case narrative
___Chain of Custody
___Sample Analysis Request
___Sample Results
___Detection Limits
___GC/MS Tuning
___Initial Calibration Data
___Continuing Calibration Data
___Blank Results
___Surrogate Results
___MS/MSD Results
___Internal Standards Performance
___Raw Data
___Sample Preparation Data
___Standards Preparation Data

Comments/Action Taken: Limited Data Review

Cooler condition noted in CN - all acceptable.

2. Holding Times (check all that apply) . . . . . ✓ ___

___Unpreserved VOA samples analyzed in 7 days from collection
___Preserved VOA samples analyzed in 14 days from collection
___BNA samples extracted in 7 days (14 days soils) from collection
___BNA extracts analyzed in 40 days from extraction
___Pest/PCB samples extracted in 7 days (14 days soils) from collection
___Pest/PCB extracts analyzed in 40 days from extraction

Qualify as estimated (J/UJ) all results analyzed past the holding time limits listed above but within 2x the limit. Qualify detects as estimated (J) and non-detects unusable (UR) for results analyzed greater than 2x the above limits.

Comments/Qualified Results:

0509-184		0510-122				0510-151		
DS 9/22/05 →		10/17/05 →				10/17/05 →		
DE ~~9/23/05~~	9/23/05	~~10/18/05~~	~~10/18/05~~	~~10/18/05~~	~~10/18/05~~	~~10/20/05~~	~~10/21/05~~ 35	~~10/20/05~~
DA 9/23/05	9/23/05	↓	↓	↓	↓	↓	↓	↓
GX	DX	HCID	GX	DX	VOC	GX	DX	VOC

3. GC/MS Tuning . . . . . ___ ___

NA

___GC/MS tuning performed
___GC/MS tuning within control limits
___GC/MS tuning outside control limits (qualify R/UR)

Comments/Qualified Results:

ORGANIC DATA VALIDATION SUMMARY

Acceptable
Yes No

4. Instrument Performance . . . . . N/A

___DDT Retention Time Acceptable (packed columns) / Resolution Acceptable (All Columns) [if no, R detects]
___Standard Checks within Retention Time Window [if no, check against expanded windows and if outside, qualify R/UR]
___DDT and/or Endrin Breakdowns >20% (J/UR DDT and Endrin, NJ all breakdown product hits)
___DBC, TCMX or DCBP retention time checks within SOW limits (if no, R/UR)

Comments/Qualified Results:_____

5. Initial and Continuing Calibration . . . . . N/A

GC/MS Data
___Initial calibration performed
___Initial calibration RRFs ≥0.05 for all compounds (if no, J/UR)
___Initial calibration RSDs ≤30% for all compounds (if no, J/UJ)
___Continuing calibration performed
___Continuing calibration RRFs ≥0.05 for all compounds (if no, J/UR)
___Continuing calibration %Ds ≤25% for all compounds (if no, J/UJ)
Pesticide/PCB data
___RSD ≤10% for performance checks (if no, J detects)
___All standards analyzed prior to sample analysis, confirmation standards analyzed at proper frequency
___Continuing calibration %D ≤15% for quantitation (≤20% for confirmation) (if no, J all detects)

Comments/Qualified Results:_____

6. Blanks . . . . 2nd. Trip. Blank (0510-151). . ✓ ___

✓ Method blanks analyzed
Common Laboratory Contaminants Detected
___Methylene choride ___Toluene
___Acetone detected ___2-Butanone
___Phthalates detected (list or attach summary sheet)_____
___TICs detected (list or attach summary sheet)_____
Qualify sample results <10x above as U at SQL
Non-common Laboratory Contaminants
___Other TCL compounds detected (list or attach summary sheet)_____
Qualify sample results <5x above as U at SQL

Comments/Qualified Results: 0509-184 - NWTPHGx BTEX ND NWTPH-Dx ND Diesel, Lube
method blank + Samples ~~was~~ were treated w/ silica gel cleanup procedure (as indicated by Y qualifier) 0510-122 - HCID ND for MB (Y qualified)
x 5 10+22 cont NWTPHGx - ND, NWTPH-Dx - ND (Y qual), VOC - MB all ND.
BETX

→ Sample EX-1-GW-101705 - had low level hits of chloroform, Bromodichloromethane - No action taken since wasn't det. in MB
0510-151 - TPH-Gas ND, Diesel ND, VOC ND

ORGANIC DATA VALIDATION SUMMARY

Acceptable
Yes No

7. Surrogates . . . . . ✓ ___

Note: Surrogate limits apply if at least one volatile or pesticide/PCB surrogate is out of specification and at least two semivolatile surrogates are out of specification.

___Surrogates analyzed
___Surrogate recoveries within method control limits
___Surrogate recoveries above method control limits (J detects only)
___Surrogate recoveries below method control limits but ≥10% (J/UJ)
___Surrogate recoveries below 10% (J/UR)

0509-184 - sums for Gx/BTEX, Dx ok
0510-122 - sums for Gx/BTEX, Dx, VOC ok
0510-151 - sums for Gx/BTEX, Dx, VOC
Jan 2/12/06

8. Matrix Spike/Matrix Spike Duplicate . . . . . ✓ ___

___MS/MSD analyzed
___MS/MSD recoveries within method control limits
___MS/MSD recoveries above method control limits (J detects only)
___MS/MSD recoveries below method control limits but ≥10% (J/UJ)
___MS/MSD recoveries below 10%, and surrogates are out (J/UR)

Comments/Qualified Results: BETX 0509-184 Dup ok / MS/MSD ok used 09-184-1
NWTPH Dx - Dup only 0510-122 Dup with Gx/BETX used 086-1 NOT related this batch
accep prec. though. MS/MSD used 10-086-1. Precision acceptable
although NOT related to these samples NWTPH-Dx used 10-122-02 Dup / VOC SB/SBD
ok / 0510-151 10-151-2 Dup ok NO spike Dx Dup ok NO spike, NOT related
9. Internal Standards Performance . . . . . — — to this
0510-151 VOC SB/SBD ok. batch.

___Internal standards added to all samples and QC
___Internal standard areas within control limits
___Internal standard areas outside control limits but greater than 10% (J/UJ)
___Internal standard areas are zero or less than 10% (J/UR)
___Internal standard RTs within ±30 second windows (if no, J/UJ)

Comments/Qualified Results: _____

10. Compound Identification . . . . . NA

___Library search data provided for positive results (if no and data is required, request from the laboratory)
___Positive results within RT criteria for dual column confirmation (Pesticide/PCB data only) (if no, qualify detects as U)
___Compound ID within ±0.06 RRT of standard (if no, qualify as J if spectral match okay)
___Mass spectral match acceptable (if no, qualify as R)

Comments/Qualified Results: _____

ORGANIC DATA VALIDATION SUMMARY

Acceptable Yes No

11. Tentatively Identified Compounds (TIC) . . . . . N/A

__TIC's searched (10/20 largest non-Aldol VOA's/Semi-VOA's)
__TIC's identified properly
__TIC's present in blank and samples (qualify according to 5x rule)
__Common laboratory contaminants reported as TIC's (qualify the following as rejected (CO_2 (m/z 44), siloxanes (m/z 73), diethyl ether, hexane, freons, phthalates <100 ug/L or <4000 ug/Kg, cyclohexene derivatives, aldols or hydroxy ketones and hydroxy aldehydes))
__Qualify valid TICs as JN

Comments/Qualified Results:

12. Result Verification . . . . . N/A

__All results supported in raw data
__Transcription errors identified (note constituent(s) and changes below)
__Calculation errors identified (note constituent(s) and changes below)

Comments/Qualified Results: RL or 'PQL' adjusted for dry wt

13. Detection Limits . . . . . ✓ __

__Sample quantitation limits (SQLs) meet the project requirements (note discrepancies below)

Comments/Qualified Results: QAPP PQL met for Soil, H2O Table QAPP-2.

14. System Performance . . . . . __ __

__Baseline anomalies noted which affect quantitation (J/UJ)
__High background MS levels noted which affect quantitation (J/UJ)
__Extraneous or coeluting peaks affecting quantitation (J/UJ)
__Poor resolution (J/UJ)
__Peak tailing/peak splitting affecting quantitation (J/UJ)

Comments/Qualified Results:

ORGANIC DATA VALIDATION SUMMARY

15. Overall Assessment

Comments/Qualified Results: All data are of acceptable + known quality – based on a limited review

0509-184 – 2 sample splits submitted to Onsite (split sent to Wy'East). Review of results as follows:

	oil	diesel	gas	B	T	E	X
EX-1-B(2)	100	25	0.25	<2	<2	<2	<2
EX-1-0922-B2	<67	<33	~~<0.25~~ 5.6	<20	~~<2~~ 56	~~<2~~ 56	<7 56

Dup XLS spreadsheet is incorrect.

NO action on split all ND trying to figure out what happened w/ Wy'East split RL results is NOT the point.

INORGANIC DATA VALIDATION SUMMARY

PROJECT: Moses Lake MF	SITE: 033-1335-004
LABORATORY: On Site	SDG: 0510-122
SAMPLES/MATRIX/ANALYSES:	
CF3-101705 / H2O / Total As by 200.8	

DATA ASSESSMENT SUMMARY

REVIEW ITEM	ICP	AA	HG	CYANIDE	OTHER
1. Data completeness	O				
2. Holding Times	O				
3. Calibration	—				
4. Blanks	O				
5. ICS	—				
6. LCS	—				
7. Duplicate RPD	O				
8. Spike Recovery	O				
9. MSA	—				
10. Other QC	—				
11. Field Duplicates	—				
12. Result Verification	—				
13. Overall Assessment	O				

O = Data had no problems/or qualified due to minor problems.
M = Data qualified due to major problems.
Z = Data unacceptable.
X = Problems but do not affect data.

Comments/Qualified Results: _____

Validated by: Jean Gray Date: 2/21/06.

Reviewed by: _____ Date: _____

INORGANIC DATA VALIDATION SUMMARY

Acceptable
Yes / No

1. Data package completeness (check if present) . . . . . ✓ ___

___Case narrative
___Chain of custody
___Sample Results
___ICV/CCV Results
___Blank Results
___ICP Interference Check Results
___Spike Recovery Results
___Duplicate Results
___LCS Results
___Standard Addition Results
___ICP Serial Dilution
___Instrument Det. Limits
___ICP Correction Factors
___ICP Linear Ranges
___Preparation Logs
___Analysis Run Logs
___ICP Raw Data
___GFAA Raw Data
___Hg Raw Data
___Cyanide Raw Data
___Other ___

Comments/Qualified Results: Limited D.V.

2. Holding times (check all that apply) . . . . . ✓ ___

___ICP/GFAA metals completed in <6 mos from collection
___Mercury analyzed in <28 days from collection
___Cyanide completed in 14 days from collection

Comments/Qualified Results: ___

3. Calibrations (check all that apply) . . . . . NA

___ICV/CCV %R for ICP/AA 90%-110% results acceptable
___ICV/CCV %R for ICP/AA, 75%-89% or 111%-125% results estimated (J/UJ)
___ICV/CCV %R for ICP/AA, <75% or >125%, reject positive results (R)
___ICV/CCV %R 80-120 for Hg, results acceptable
___ICV/CCV %R for Hg, 65%-79% or 121%-135% results estimated (J/UJ)
___ICV/CCV %R for Hg, <65% or >135% reject positive results (R)
___ICV/CCV %R 85-115 for Cyanide, results acceptable
___ICV/CCV %R 70-84% or 116-130%, results estimated (J/UJ)
___ICV/CCV %R <70% or >130%, reject positive results (R)

Comments/Qualified Results: ___

Acceptable
Yes No

4. Blanks (check all that apply) . . . . . ✓ ___

___Detects reported in ICB/CCB, list:
✓Detects in preparation blanks, list: None
___Detects in field blanks, list:

Qualify as undetected (U) all sample concentrations ≤5X any associated blank concentrations.

Comments/Qualified Results:

5. Interference Checks (check all that apply) . . . . . NA

___ICS A/B Recoveries Acceptable
___Al, Ca, Fe, Mg sample concentrations >ICS concentrations
___ICS %R >120%, results >IDL estimated (J)
___ICS %R 50-79%, results >IDL estimated (J)
___ICS %R 50-79%, results <IDL estimated (UJ)
___ICS %R <50%, results >IDL and <IDL rejected (R/UR)

Comments/Qualified Results:

6. Laboratory Control Samples (check all that apply) . . . . . NA

___LCS %R 80-120
___LCS %R 50-79% or >120%, results >IDL estimated (J)
___LCS %R 50-79% and results <IDL estimated (UJ)
___LCS %R <50% and all results rejected (R/UR)

Comments/Qualified Results:

Acceptable
Yes ✓ No

7. Duplicate (check all that apply) . . . . . ✓ ___

✓ Duplicate RPD ≤20% for waters (≤35% for soils) for results >5X CRDL
___ Duplicate range is within ±CRDL (±2xCRDL for soils) for results <5X CRDL

Comments/Qualified Results: _____

8. Spike Recovery (check all that apply) . . . . . ✓ ___

✓ Spike %R with 75-125%
___ Spike %R 30-74%, >125%, results >IDL estimated (J)
___ Spike %R 30-74% results <IDL estimated (UJ)
___ Spike %R <30%, results <IDL rejected (UR)
___ Field blank used for spike analysis

Comments/Qualified Results: _____

9. GFAA Performance . . . . . NA

___ Duplicate injection RSD <20%
___ Duplicate injection RSD >20%, results >CRDL estimated (J)
___ Analytical spike %R 85-115%
___ Analytical spike %R 40-85%, results >IDL estimated (J)
___ Anlaytical spike %R 10-40%, results <IDL estimated (UJ)
___ Analytical spike %R <10% results <IDL rejected (R)

Comments/Qualified Results: _____

Acceptable
Yes No

10. Other QC . . . . . NA

Comments/Qualified Results:

11. Field Duplicates . . . . . NA

__Field duplicate RPD ≤20% (≤35% for soils)

Comments/Qualified Results:

12. Result Verification . . . . . NA

__All results supported in raw data

Comments/Qualified Results:

13. Overall Assessment . . . . . ✓

Comments/Qualified Results: ok to use

OnSite Environmental Inc.
Analytical Testing and Mobile Laboratory Services

RECEIVED
SEP 29 2005
Golder Associates

September 27, 2005

Ted Norton
Golder Associates Inc.
18300 NE Union Hill Road
Suite 200
Redmond, WA 98052-3333

Re: Analytical Data for Project 003-1335-002
Laboratory Reference No. 0509-184

Dear Ted:

Enclosed are the analytical results and associated quality control data for samples submitted on September 27, 2005.

The standard policy of OnSite Environmental Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

Date of Report: September 27, 2005
Samples Submitted: September 27, 2005
Laboratory Reference: 0509-184
Project: 003-1335-002

Case Narrative

Samples were collected on September 22, 2005 and received by the laboratory on September 27, 2005. They were maintained at the laboratory at a temperature of 2°C to 6°C except as noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

NWTPH Gx/BTEX Analysis

Per EPA Method 5035A, samples were received by the laboratory in preweighed 40 mL VOA vials within 48 hours of sample collection. They were stored in a freezer at between -7°C and -20°C until extraction or analysis.

Any other QA/QC issues associated with this extraction and analysis will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: September 27, 2005
Samples Submitted: September 27, 2005
Laboratory Reference: 0509-184
Project: 003-1335-002

NWTPH-Gx/BTEX
METHOD BLANK QUALITY CONTROL

Date Extracted:	9-23-05
Date Analyzed:	9-23-05
Matrix: Soil	
Units: mg/kg (ppm)	
Lab ID:	MB0923S2

	Result	Flags	PQL
Benzene	**ND**		0.020
Toluene	**ND**		0.050
Ethyl Benzene	**ND**		0.050
m,p-Xylene	**ND**		0.050
o-Xylene	**ND**		0.050
TPH-Gas	**ND**		5.0
Surrogate Recovery:			
Fluorobenzene	96%		

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: September 27, 2005
Samples Submitted: September 27, 2005
Laboratory Reference: 0509-184
Project: 003-1335-002

NWTPH-Gx/BTEX
DUPLICATE QUALITY CONTROL

Date Extracted: 9-23-05
Date Analyzed: 9-23-05

Matrix: Soil
Units: mg/kg (ppm)

Lab ID:	09-184-01 Original	09-184-01 Duplicate	RPD	Flags
Benzene	ND	ND	NA	
Toluene	ND	ND	NA	
Ethyl Benzene	ND	ND	NA	
m,p-Xylene	ND	ND	NA	
o-Xylene	ND	ND	NA	
TPH-Gas	ND	ND	NA	
Surrogate Recovery:				
Fluorobenzene	84%	81%		

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: September 27, 2005
Samples Submitted: September 27, 2005
Laboratory Reference: 0509-184
Project: 003-1335-002

NWTPH-Gx/BTEX
MS/MSD QUALITY CONTROL

Date Extracted: 9-23-05
Date Analyzed: 9-23-05

Matrix: Soil
Units: mg/kg (ppm)

Spike Level (ppm): 2.09

Lab ID:	09-184-01 **MS**	Percent Recovery	09-184-01 **MSD**	Percent Recovery	**RPD**	**Flags**
Benzene	**2.16**	**103**	**2.13**	**102**	1	
Toluene	**2.09**	**100**	**2.07**	**99**	1	
Ethyl Benzene	**2.07**	**99**	**2.05**	**98**	1	
m,p-Xylene	**2.08**	**100**	**2.06**	**99**	1	
o-Xylene	**2.07**	**99**	**2.05**	**98**	1	
Surrogate Recovery:						
Fluorobenzene	82%		83%			

This report pertains to the samples analyzed in accordance with the chain of custody and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: September 27, 2005
Samples Submitted: September 27, 2005
Laboratory Reference: 0509-184
Project: 003-1335-002

NWTPH-Dx
METHOD BLANK QUALITY CONTROL

Date Extracted:	9-23-05
Date Analyzed:	9-23-05
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB0923S1
Diesel Range:	**ND**
PQL:	25
Identification:	---
Lube Oil Range:	**ND**
PQL:	50
Identification:	---
Surrogate Recovery	
o-Terphenyl:	102%
Flags:	Y

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: September 27, 2005
Samples Submitted: September 27, 2005
Laboratory Reference: 0509-184
Project: 003-1335-002

NWTPH-Dx
DUPLICATE QUALITY CONTROL

Date Extracted:	9-23-05
Date Analyzed:	9-23-05
Matrix:	Soil
Units:	mg/kg (ppm)

Lab ID:	09-184-01	09-184-01 DUP
Diesel Range:	**ND**	**ND**
PQL:	25	25
RPD:	N/A	
Surrogate Recovery		
o-Terphenyl:	101%	88%
Flags:	Y	Y

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

G - Insufficient sample quantity for duplicate analysis.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.

O - Hydrocarbons indicative of diesel fuel are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a silica gel cleanup procedure.

Y - Sample extract treated with an acid/silica gel cleanup procedure.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Chain of Custody

OnSite Environmental Inc.
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • Fax: (425) 885-4603

Company: GOLDER
Project Number: 003-1335-002
Project Name: Moses Lake MF
Project Manager: Ted Norton / Doug Morell
Sampled by: Paul Van Middlesworth

Turnaround Request (in working days)

(Check One)

- [x] Same Day
- [ ] 1 Day
- [ ] 2 Day
- [ ] 3 Day
- [ ] Standard (7 working days)
- [ ] _____ (other)

Laboratory Number: 09-184

Requested Analysis

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont.	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Dx	Volatiles by 8260B	Halogenated Volatiles by 8260B	Semivolatiles by 8270C	PAHs by 8270C / SIM	PCBs by 8082	Pesticides by 8081A	Herbicides by 8151A	Total RCRA Metals (8)	TCLP Metals	HEM by 1664	VPH	EPH				% Moisture
1	EX-1-0922-A5	9/22/05	11:15	S	2		X	X																X
2	EX-1-0922-B2	↓	12:15	S	2		X	X																X
3	EX-1-0922-C7	↓	15:35	S	2		X	X																X

	Signature	Company	Date	Time
Relinquished by	Paul Van Middlesworth	GOLDER	9/22/05	16:00
Received by		ONSITE	9/23/05	9:50
Relinquished by				
Received by				
Relinquished by				
Received by				

Comments/Special Instructions:

Reviewed by/Date

Reviewed by/Date

Chromatograms with final report ☐

OnSite Environmental Inc.
Analytical Testing and Mobile Laboratory Services

October 31, 2005

RECEIVED
NOV 3 2005
Golder Associates

Original invoice to accounting

Ted Norton
Golder Associates Inc.
18300 NE Union Hill Road
Suite 200
Redmond, WA 98052-3333

Re: Analytical Data for Project 033-1335-004
Laboratory Reference No. 0510-151

Dear Ted:

Enclosed are the analytical results and associated quality control data for samples submitted on October 19, 2005.

The standard policy of OnSite Environmental Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

Date of Report: October 31, 2005
Samples Submitted: October 19, 2005
Laboratory Reference: 0510-151
Project: 033-1335-004

Case Narrative

Samples were collected on October 17, 2005 and received by the laboratory on October 19, 2005. They were maintained at the laboratory at a temperature of 2°C to 6°C except as noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: October 31, 2005
Samples Submitted: October 19, 2005
Laboratory Reference: 0510-151
Project: 033-1335-004

NWTPH-Gx
METHOD BLANK QUALITY CONTROL

Date Extracted: 10-20-05
Date Analyzed: 10-20-05

Matrix: Water
Units: ug/L (ppb)

Lab ID: MB1020W2

	Result	Flags	PQL
TPH-Gas	ND		100

Surrogate Recovery:
Fluorobenzene 91%

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: October 31, 2005
Samples Submitted: October 19, 2005
Laboratory Reference: 0510-151
Project: 033-1335-004

NWTPH-Gx
DUPLICATE QUALITY CONTROL

Date Extracted: 10-20-05
Date Analyzed: 10-20-05

Matrix: Water
Units: ug/L (ppb)

Lab ID:	10-151-02 **Original**	10-151-02 **Duplicate**	**RPD**	**Flags**
TPH-Gas	**ND**	**ND**	NA	
Surrogate Recovery:				
Fluorobenzene	93%	93%		

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: October 31, 2005
Samples Submitted: October 19, 2005
Laboratory Reference: 0510-151
Project: 033-1335-004

NWTPH-Dx
METHOD BLANK QUALITY CONTROL

Date Extracted:	10-24-05
Date Analyzed:	10-25-05
Matrix:	Water
Units:	mg/L (ppm)
Lab ID:	MB1024W1
Diesel Range:	**ND**
PQL:	0.25
Identification:	---
Lube Oil Range:	**ND**
PQL:	0.40
Identification:	---
Surrogate Recovery	
o-Terphenyl:	103%
Flags:	Y

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: October 31, 2005
Samples Submitted: October 19, 2005
Laboratory Reference: 0510-151
Project: 033-1335-004

NWTPH-Dx
DUPLICATE QUALITY CONTROL

Date Extracted:	10-24-05
Date Analyzed:	10-25-05
Matrix:	Water
Units:	mg/L (ppm)

Lab ID:	10-163-01	10-163-01 DUP
Diesel Range:	**0.859**	**0.993**
PQL:	0.25	0.25
RPD:	14	
Surrogate Recovery		
o-Terphenyl:	119%	117%
Flags:	Y	Y

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: October 31, 2005
Samples Submitted: October 19, 2005
Laboratory Reference: 0510-151
Project: 033-1335-004

VOLATILES by EPA 8260B
METHOD BLANK QUALITY CONTROL
Page 1 of 2

Date Extracted:	10-20-05
Date Analyzed:	10-20-05
Matrix:	Water
Units:	ug/L (ppb)
Lab ID:	MB1020W1

Compound	Results	Flags	PQL
Dichlorodifluoromethane	ND		0.20
Chloromethane	ND		0.20
Vinyl Chloride	ND		0.20
Bromomethane	ND		0.20
Chloroethane	ND		0.20
Trichlorofluoromethane	ND		0.20
1,1-Dichloroethene	ND		0.20
Acetone	ND		5.0
Iodomethane	ND		1.0
Carbon Disulfide	ND		0.20
Methylene Chloride	ND		1.0
(trans) 1,2-Dichloroethene	ND		0.20
Methyl t-Butyl Ether	ND		0.20
1,1-Dichloroethane	ND		0.20
Vinyl Acetate	ND		1.0
2,2-Dichloropropane	ND		0.20
(cis) 1,2-Dichloroethene	ND		0.20
2-Butanone	ND		5.0
Bromochloromethane	ND		0.20
Chloroform	ND		0.20
1,1,1-Trichloroethane	ND		0.20
Carbon Tetrachloride	ND		0.20
1,1-Dichloropropene	ND		0.20
Benzene	ND		0.20
1,2-Dichloroethane	ND		0.20
Trichloroethene	ND		0.20
1,2-Dichloropropane	ND		0.20
Dibromomethane	ND		0.20
Bromodichloromethane	ND		0.20
2-Chloroethyl Vinyl Ether	ND		1.0
(cis) 1,3-Dichloropropene	ND		0.20
Methyl Isobutyl Ketone	ND		2.0
Toluene	ND		0.20
(trans) 1,3-Dichloropropene	ND		0.20

This report pertains to the samples analyzed in accordance with the chain of custody and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: October 31, 2005
Samples Submitted: October 19, 2005
Laboratory Reference: 0510-151
Project: 033-1335-004

VOLATILES by EPA 8260B
METHOD BLANK QUALITY CONTROL
Page 2 of 2

Lab ID: MB1020W1

Compound	Results	Flags	PQL
1,1,2-Trichloroethane	ND		0.20
Tetrachloroethene	ND		0.20
1,3-Dichloropropane	ND		0.20
2-Hexanone	ND		2.0
Dibromochloromethane	ND		0.20
1,2-Dibromoethane	ND		0.20
Chlorobenzene	ND		0.20
1,1,1,2-Tetrachloroethane	ND		0.20
Ethylbenzene	ND		0.20
m,p-Xylene	ND		0.40
o-Xylene	ND		0.20
Styrene	ND		0.20
Bromoform	ND		1.0
Isopropylbenzene	ND		0.20
Bromobenzene	ND		0.20
1,1,2,2-Tetrachloroethane	ND		0.20
1,2,3-Trichloropropane	ND		0.20
n-Propylbenzene	ND		0.20
2-Chlorotoluene	ND		0.20
4-Chlorotoluene	ND		0.20
1,3,5-Trimethylbenzene	ND		0.20
tert-Butylbenzene	ND		0.20
1,2,4-Trimethylbenzene	ND		0.20
sec-Butylbenzene	ND		0.20
1,3-Dichlorobenzene	ND		0.20
p-Isopropyltoluene	ND		0.20
1,4-Dichlorobenzene	ND		0.20
1,2-Dichlorobenzene	ND		0.20
n-Butylbenzene	ND		0.20
1,2-Dibromo-3-chloropropane	ND		1.0
1,2,4-Trichlorobenzene	ND		0.20
Hexachlorobutadiene	ND		0.20
Naphthalene	ND		1.0
1,2,3-Trichlorobenzene	ND		0.20

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	97	70-123
Toluene, d8	95	70-119
4-Bromofluorobenzene	100	70-119

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: October 31, 2005
Samples Submitted: October 19, 2005
Laboratory Reference: 0510-151
Project: 033-1335-004

VOLATILES by EPA 8260B
SB/SBD QUALITY CONTROL

Date Extracted: 10-20-05
Date Analyzed: 10-20-05

Matrix: Water
Units: ug/L (ppb)

Lab ID: SB1020W1

Compound	Spike Amount	SB	Percent Recovery	SBD	Percent Recovery	Recovery Limits	Flags
1,1-Dichloroethene	10.0	10.3	103	10.7	107	70-130	
Benzene	10.0	10.2	102	10.2	102	70-130	
Trichloroethene	10.0	9.92	99	10.0	100	70-130	
Toluene	10.0	9.95	99	9.59	96	70-130	
Chlorobenzene	10.0	11.1	111	10.8	108	70-130	

	RPD	RPD Limit	Flags
1,1-Dichloroethene	4	17	
Benzene	0	13	
Trichloroethene	1	12	
Toluene	4	14	
Chlorobenzene	3	9	

This report pertains to the samples analyzed in accordance with the chain of custody and is intended only for the use of the individual or company to whom it is addressed.

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

G - Insufficient sample quantity for duplicate analysis.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.

O - Hydrocarbons indicative of diesel fuel are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a silica gel cleanup procedure.

Y - Sample extract treated with an acid/silica gel cleanup procedure.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Chain of Custody

OnSite Environmental Inc.
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • Fax: (425) 885-4603

Laboratory Number: 10-151

Company: GeoEngineers
Project Number: 033-1335-004
Project Name: Moses Lake MF
Project Manager: Ted Norton
Sampled by: Paul VanMiddlesworth

Turnaround Request (in working days)

(Check One)

- ☐ Same Day
- ☐ 1 Day
- ☐ 2 Day
- ☐ 3 Day
- ☒ Standard (7 working days)
- ☐ _____ (other)

Requested Analysis

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont.	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Dx	Volatiles by 8260B	Halogenated Volatiles by 8260B	Semivolatiles by 8270C	PAHs by 8270C / SIM	PCBs by 8082	Pesticides by 8081A	Herbicides by 8151A	Total RCRA Metals (8)	TCLP Metals	HEM by 1664	VPH	EPH	% Moisture
1	MW-17	10/17/05	1745	W	8		X	X	X												
2	MW-18	10/17/05	1930	W	8		X	X	X												
3	Trip Blank				1		~~X~~ NO	~~X~~ NW	X												

	Signature	Company	Date	Time
Relinquished by	Paul VanMiddlesworth	GeoEngineers	10/18/05	1130
Received by	M. Van	OSE	10/19/05	1400
Relinquished by				
Received by				
Relinquished by				
Received by				

Comments/Special Instructions:

Reviewed by/Date

Reviewed by/Date

Chromatograms with final report ☐

DISTRIBUTION: White - Original; Yellow - Report Copy; Pink - Client Copy

OnSite Environmental Inc.
Analytical Testing and Mobile Laboratory Services

RECEIVED
OCT 21 2005
Golder Associates

October 19, 2005

Ted Norton
Golder Associates Inc.
18300 NE Union Hill Road
Suite 200
Redmond, WA 98052-3333

Re: Analytical Data for Project 033-1335-004
Laboratory Reference No. 0510-122

Dear Ted:

Enclosed are the analytical results and associated quality control data for samples submitted on October 18 2005.

The standard policy of OnSite Environmental Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

for David Baumeister
Project Manager

Enclosures

Date of Report: October 19, 2005
Samples Submitted: October 18, 2005
Laboratory Reference: 0510-122
Project: 033-1335-004

Case Narrative

Samples were collected on October 17, 2005 and received by the laboratory on October 18 2005. They were maintained at the laboratory at a temperature of 2°C to 6°C except as noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

This report pertains to the samples analyzed in accordance with the chain of custody and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: October 19, 2005
Samples Submitted: October 18, 2005
Laboratory Reference: 0510-122
Project: 033-1335-004

NWTPH-HCID
METHOD BLANK QUALITY CONTROL

Date Extracted:	10-18-05
Date Analyzed:	10-18-05
Matrix:	Water
Units:	mg/L (ppm)
Lab ID:	MB1018W1
Gasoline:	**ND**
PQL:	0.10
Diesel Fuel:	**ND**
PQL:	0.25
Lube Oil:	**ND**
PQL:	0.40
Surrogate Recovery:	
o-Terphenyl	93%
Flags	Y

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: October 19, 2005
Samples Submitted: October 18, 2005
Laboratory Reference: 0510-122
Project: 033-1335-004

NWTPH-Gx/BTEX
METHOD BLANK QUALITY CONTROL

Date Extracted: 10-18-05
Date Analyzed: 10-18-05

Matrix: Water
Units: ug/L (ppb)

Lab ID: MB1018W1

	Result	Flags	PQL
Benzene	**ND**		1.0
Toluene	**ND**		1.0
Ethyl Benzene	**ND**		1.0
m,p-Xylene	**ND**		1.0
o-Xylene	**ND**		1.0
TPH-Gas	**ND**		100

Surrogate Recovery:
Fluorobenzene 80%

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and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: October 19, 2005
Samples Submitted: October 18, 2005
Laboratory Reference: 0510-122
Project: 033-1335-004

NWTPH-Gx/BTEX
DUPLICATE QUALITY CONTROL

Date Extracted: 10-18-05
Date Analyzed: 10-18-05

Matrix: Water
Units: ug/L (ppb)

Lab ID:	10-086-01 **Original**	10-086-01 **Duplicate**	**RPD**	**Flags**
Benzene	**ND**	**ND**	NA	
Toluene	**ND**	**ND**	NA	
Ethyl Benzene	**ND**	**ND**	NA	
m,p-Xylene	**ND**	**ND**	NA	
o-Xylene	**ND**	**ND**	NA	
TPH-Gas	**ND**	**ND**	NA	
Surrogate Recovery:				
Fluorobenzene	84%	85%		

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: October 19, 2005
Samples Submitted: October 18, 2005
Laboratory Reference: 0510-122
Project: 033-1335-004

NWTPH-Gx/BTEX
MS/MSD QUALITY CONTROL

Date Extracted: 10-18-05
Date Analyzed: 10-18-05

Matrix: Water
Units: ug/L (ppb)

Spike Level: 50.0 ppb

Lab ID:	10-086-01 **MS**	Percent Recovery	10-086-01 **MSD**	Percent Recovery	**RPD**	**Flags**
Benzene	**47.8**	**96**	**49.2**	**99**	3	
Toluene	**48.0**	**96**	**49.7**	**99**	4	
Ethyl Benzene	**47.5**	**95**	**49.3**	**99**	4	
m,p-Xylene	**47.5**	**95**	**49.3**	**99**	4	
o-Xylene	**47.5**	**95**	**49.7**	**99**	4	

Surrogate Recovery:			
Fluorobenzene	94%		95%

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: October 19, 2005
Samples Submitted: October 18, 2005
Laboratory Reference: 0510-122
Project: 033-1335-004

NWTPH-Dx
METHOD BLANK QUALITY CONTROL

Date Extracted:	10-18-05
Date Analyzed:	10-18-05
Matrix:	Water
Units:	mg/L (ppm)
Lab ID:	MB1018W1
Diesel Range:	**ND**
PQL:	0.25
Identification:	---
Lube Oil Range:	**ND**
PQL:	0.40
Identification:	---
Surrogate Recovery	
o-Terphenyl:	93%
Flags:	Y

This report pertains to the samples analyzed in accordance with the chain of custody and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: October 19, 2005
Samples Submitted: October 18, 2005
Laboratory Reference: 0510-122
Project: 033-1335-004

NWTPH-Dx
DUPLICATE QUALITY CONTROL

Date Extracted:	10-18-05
Date Analyzed:	10-18-05
Matrix:	Water
Units:	mg/L (ppm)

Lab ID:	10-122-02	10-122-02 DUP
Diesel Range:	**ND**	**ND**
PQL:	0.25	0.25
RPD:	N/A	
Surrogate Recovery		
o-Terphenyl:	97%	77%
Flags:	Y	Y

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: October 19, 2005
Samples Submitted: October 18, 2005
Laboratory Reference: 0510-122
Project: 033-1335-004

VOLATILES by EPA 8260B
METHOD BLANK QUALITY CONTROL
Page 1 of 2

Date Extracted:	10-18-05
Date Analyzed:	10-18-05
Matrix:	Water
Units:	ug/L (ppb)
Lab ID:	MB1018W2

Compound	Results	Flags	PQL
Dichlorodifluoromethane	ND		0.20
Chloromethane	ND		0.20
Vinyl Chloride	ND		0.20
Bromomethane	ND		0.20
Chloroethane	ND		0.20
Trichlorofluoromethane	ND		0.20
1,1-Dichloroethene	ND		0.20
Acetone	ND		5.0
Iodomethane	ND		1.0
Carbon Disulfide	ND		0.20
Methylene Chloride	ND		1.0
(trans) 1,2-Dichloroethene	ND		0.20
Methyl t-Butyl Ether	ND		0.20
1,1-Dichloroethane	ND		0.20
Vinyl Acetate	ND		1.0
2,2-Dichloropropane	ND		0.20
(cis) 1,2-Dichloroethene	ND		0.20
2-Butanone	ND		5.0
Bromochloromethane	ND		0.20
Chloroform	ND		0.20
1,1,1-Trichloroethane	ND		0.20
Carbon Tetrachloride	ND		0.20
1,1-Dichloropropene	ND		0.20
Benzene	ND		0.20
1,2-Dichloroethane	ND		0.20
Trichloroethene	ND		0.20
1,2-Dichloropropane	ND		0.20
Dibromomethane	ND		0.20
Bromodichloromethane	ND		0.20
2-Chloroethyl Vinyl Ether	ND		1.0
(cis) 1,3-Dichloropropene	ND		0.20
Methyl Isobutyl Ketone	ND		2.0
Toluene	ND		0.20
(trans) 1,3-Dichloropropene	ND		0.20

This report pertains to the samples analyzed in accordance with the chain of custody and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: October 19, 2005
Samples Submitted: October 18, 2005
Laboratory Reference: 0510-122
Project: 033-1335-004

VOLATILES by EPA 8260B
METHOD BLANK QUALITY CONTROL
Page 2 of 2

Lab ID: MB1018W2

Compound	Results	Flags	PQL
1,1,2-Trichloroethane	ND		0.20
Tetrachloroethene	ND		0.20
1,3-Dichloropropane	ND		0.20
2-Hexanone	ND		2.0
Dibromochloromethane	ND		0.20
1,2-Dibromoethane	ND		0.20
Chlorobenzene	ND		0.20
1,1,1,2-Tetrachloroethane	ND		0.20
Ethylbenzene	ND		0.20
m,p-Xylene	ND		0.40
o-Xylene	ND		0.20
Styrene	ND		0.20
Bromoform	ND		1.0
Isopropylbenzene	ND		0.20
Bromobenzene	ND		0.20
1,1,2,2-Tetrachloroethane	ND		0.20
1,2,3-Trichloropropane	ND		0.20
n-Propylbenzene	ND		0.20
2-Chlorotoluene	ND		0.20
4-Chlorotoluene	ND		0.20
1,3,5-Trimethylbenzene	ND		0.20
tert-Butylbenzene	ND		0.20
1,2,4-Trimethylbenzene	ND		0.20
sec-Butylbenzene	ND		0.20
1,3-Dichlorobenzene	ND		0.20
p-Isopropyltoluene	ND		0.20
1,4-Dichlorobenzene	ND		0.20
1,2-Dichlorobenzene	ND		0.20
n-Butylbenzene	ND		0.20
1,2-Dibromo-3-chloropropane	ND		1.0
1,2,4-Trichlorobenzene	ND		0.20
Hexachlorobutadiene	ND		0.20
Naphthalene	ND		1.0
1,2,3-Trichlorobenzene	ND		0.20

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	101	70-123
Toluene, d8	102	70-119
4-Bromofluorobenzene	116	70-119

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: October 19, 2005
Samples Submitted: October 18, 2005
Laboratory Reference: 0510-122
Project: 033-1335-004

VOLATILES by EPA 8260B
SB/SBDD QUALITY CONTROL

Date Extracted: 10-18-05
Date Analyzed: 10-18-05

Matrix: Water
Units: ug/L (ppb)

Lab ID: SB1018W2

Compound	Spike Amount	SB	Percent Recovery	SBD	Percent Recovery	Recovery Limits	Flags
1,1-Dichloroethene	10.0	9.69	97	10.2	102	70-130	
Benzene	10.0	9.76	98	9.68	97	70-130	
Trichloroethene	10.0	8.64	86	8.74	87	70-130	
Toluene	10.0	9.95	100	9.81	98	70-130	
Chlorobenzene	10.0	10.0	100	10.3	103	70-130	

	RPD	RPD Limit	Flags
1,1-Dichloroethene	5	17	
Benzene	1	13	
Trichloroethene	1	12	
Toluene	1	14	
Chlorobenzene	3	9	

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: October 19, 2005
Samples Submitted: October 18, 2005
Laboratory Reference: 0510-122
Project: 033-1335-004

TOTAL ARSENIC
EPA 200.8
METHOD BLANK QUALITY CONTROL

Date Extracted:	10-18-05
Date Analyzed:	10-18-05
Matrix:	Water
Units:	ug/L (ppb)
Lab ID:	MB1018W1

Analyte	Method	Result	PQL
Arsenic	200.8	**ND**	3.3

This report pertains to the samples analyzed in accordance with the chain of custody.
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: October 19, 2005
Samples Submitted: October 18, 2005
Laboratory Reference: 0510-122
Project: 033-1335-004

TOTAL ARSENIC
EPA 200.8
DUPLICATE QUALITY CONTROL

Date Extracted: 10-18-05
Date Analyzed: 10-18-05

Matrix: Water
Units: ug/L (ppb)

Lab ID: 10-122-02

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Arsenic	**20.2**	**19.5**	4	3.3	

This report pertains to the samples analyzed in accordance with the chain of custody and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: October 19, 2005
Samples Submitted: October 18, 2005
Laboratory Reference: 0510-122
Project: 033-1335-004

TOTAL ARSENIC
EPA 200.8
MS/MSD QUALITY CONTROL

Date Extracted: 10-18-05
Date Analyzed: 10-18-05

Matrix: Water
Units: ug/L (ppb)

Lab ID: 10-122-02

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Arsenic	110	**132**	102	**135**	104	3	

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

G - Insufficient sample quantity for duplicate analysis.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.

O - Hydrocarbons indicative of diesel fuel are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a silica gel cleanup procedure.

Y - Sample extract treated with an acid/silica gel cleanup procedure.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

This report pertains to the samples analyzed in accordance with the chain of custody and is intended only for the use of the individual or company to whom it is addressed.

Chain of Custody

Page 1 of 1

OnSite Environmental Inc.
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • Fax: (425) 885-4603

Company: Golder Associates
Project Number: 033-1335-004
Project Name: Moses Lake MF
Project Manager: Ted Norton
Sampled by: Pat VanMiddlesworth

Turnaround Request (in working days)

(Check One)

- [X] Same Day
- [ ] 1 Day
- [ ] 2 Day
- [ ] 3 Day
- [ ] Standard (7 working days)
- [ ] _____ (other)

Laboratory Number: 10-122

Requested Analysis

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont.	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Dx	Volatiles by 8260B	Halogenated Volatiles by 8260B	Semivolatiles by 8270C	PAHs by 8270C / SIM	PCBs by 8082	Pesticides by 8081A	Herbicides by 8151A	Total RCRA Metals (8)	TCLP Metals	HEM by 1664	VPH	EPH	Total As				% Moisture
1	EX-1-GW-101705	10/17/05	1445	W	11	X			X																
2	CF3-101705	10/17/05	1510	W	6		X	X													X				

	Signature	Company	Date	Time
Relinquished by		Golder	10/17/05	16:00
Received by		OSE	10/18/05	11:05
Relinquished by				
Received by				
Relinquished by				
Received by				

Comments/Special Instructions:
Hold additional bottles for EX-1-GW-101705 for additional analyses upon request following TPH-HCID analysis.

Reviewed by/Date

Reviewed by/Date

Chromatograms with final report ☐

White - Yellow - Pink - Copy

ORGANIC DATA VALIDATION SUMMARY

PROJECT NO.: 003-1335-002	SITE: Moses Lake MF
LABORATORY: Wy'East, Portland Oregon	SDG: 57784, 57803, 57851, 57852, 57892, 57931
SAMPLES/MATRIX/ANALYSES:	
see attached for Sample ID's / soil / NWTPH Dx	
/ / NWTPH Gx / 5035A	
/ / BTEX 8021B/5035A	

DATA ASSESSMENT SUMMARY

Review Item	VOA	BNA	PEST PCB	PHOS. PEST	CHLOR. HERB	DIOXIN FURAN	NWTPH Dx GC	NWTPH Gx/BTEX GC
1. Data Completeness							M	M
2. Holding Times							O	O
3. GC/MS Tuning							NA	NA
4. Instrument Performance							NA	NA
5. Calibrations							NA	NA
6. Blanks							O	O
7. Surrogates							~~M~~ O	~~M~~ O
8. MS/MSD							NA	M
9. Internal Standards							↓	NA ↓
10. Compound Identification								
11. Tent. Ident. Cmpds (TIC)								
12. Result Verification								
13. Detection Limits							O	O*
14. System Performance								
15. Overall Assessment							M	M

Jw 2/20/2006

0 = Data had no problems/or qualified due to minor problems.
M = Data qualified due to major problems.
Z = Data unacceptable.
X = Problems but do not affect data.

Comments/Qualified Results: - lack of precision data
- let go of surrogate calc issue in NWTPH-Gx, dry wt
- sample receipt conditions >48 hours an issue for light end (qualify impacted samples).

Validated by: Jesse Compeau Date: 2/17/2006

Reviewed by: _____ Date: _____

include w/ DV

57784 (NWTPH-Gx/BTEX and NWTPHDx):

EX-1-B(2)
EX-1-C(7)
EX-1-D(8)
EX-1-E(8)

57803 (NWTPH-Gx/BTEX and NWTPHDx):

EX-2-0928-C(4)
EX-2-0928-F(4)
EX-2-0928-H(5)
EX-2-0928-J(6)
EX-1-SWMB-40(8)
EX-1-SWMB-60(4)
EX-1-0928-G(7)
EX-1-0928-F(8)

57851 (NWTPH-Gx/BTEX and NWTPHDx):

EX-1-SWMB-40(8)
EX-1-SWMB-45(8)
EX-1-SWMB-50(8)
EX-1-SWMB-55(8)
EX-1-SWMB-60(4)
EX-1-SWMB-65(4)
EX-1-SWMB-70(4)
EX-2-0929-K(6)

57852 (NWTPH-Gx/BTEX and NWTPHDx):

EX-1-SWMB-1(4)
EX-1-SWMB-5(4)
EX-1-SWMB-10(4)
EX-1-SWMB-15(5)
EX-1-SWMB-20(5)
EX-1-SWMB-25(5)
EX-1-SWMB-30(6)
EX-1-SWMB-35(6)
EX-2-25N-50E-4
EX-2-25N-100E-4
EX-2-50N-125E-4
EX-2-60N-125E-4

57892 (NWTPH-Gx/BTEX and NWTPHDx):

EX-2-25N-50E-7
EX-2-50N-75E-6
EX-2-75N-140E-2WALL
EX-2-100N-130E-3WALL
EX-2-75N-50E-6(B)
EX-2-90N-50E-7(B)
EX-2-25N-100E-5WALL
EX-2-50N-125E-3WALL

57931 (NWTPH-Gx/BTEX and NWTPHDx):

EX-2-50N-10W-7B
EX-2-120N-50E-6B
EX-1-P-5W

EX-2-50N-40W-6B

EX-2-50N-60W-7B

EX-1-M-4W

EX-1-N-4W

ORGANIC DATA VALIDATION SUMMARY

Acceptable: Yes / No

1. Data Completeness (check if present) . . . . . — X

NO Case narrative
YES Chain of Custody
Yes Sample Analysis Request
Yes Sample Results
NO Detection Limits only on blanks
NO GC/MS Tuning
NO Initial Calibration Data
some Continuing Calibration Data

Yes Blank Results
Yes Surrogate Results – but not on blanks see surr section
MS/MSD Results LCS on — reports for diesel
NO Internal Standards Performance requested more info
Raw Data
Sample Preparation Data
Standards Preparation Data

Comments/Action Taken: Limited Data Review.

Chain – NO cooler temp reported on any of the chains ~~☆~~ see below
Chain of Custody – NOT signed for 57784,

2. Holding Times (check all that apply) . . . . . ✓ —

__Unpreserved VOA samples analyzed in 7 days from collection
__Preserved VOA samples analyzed in 14 days from collection
__BNA samples extracted in 7 days (14 days soils) from collection
__BNA extracts analyzed in 40 days from extraction
__Pest/PCB samples extracted in 7 days (14 days soils) from collection
__Pest/PCB extracts analyzed in 40 days from extraction

FHC's done on quick TAT
D.A. NOT reported assume
D. Reported to be H.T end date.

Qualify as estimated (J/UJ) all results analyzed past the holding time limits listed above but within 2x the limit. Qualify detects as estimated (J) and non-detects unusable (UR) for results analyzed greater than 2x the above limits.

Comments/Qualified Results:
D.S. 9/26/05 9/28/05 9/29/05 9/30/05 10/3,4/05 10/5/05
D.E
D.R. 9/29/05 9/30/05 10/4/05 → 10/11/05 →
DxGxBTEX all parameters →

3. GC/MS Tuning . . . . . — —

NA

__GC/MS tuning performed
__GC/MS tuning within control limits
__GC/MS tuning outside control limits (qualify R/UR)

Comments/Qualified Results:

Typically 2 day delay on sample collection to date of receipt. See attached for more details. Samples rec'd >48 hours are questionable particularly since sample cond not indicated on chains. J/UJ gas/BETX results on >48 hours 57784, 57851, 57852.

Lab Number	D. Sampled	Date Received	
57784	9/26/05	9/29/05	3
57803	9/28/05	9/28/05	<1
57851	9/29/05	10/3/05	4
57852	9/30/05	10/3/05	3
57892	10/4/05	10/5/05	1-2
57931	10/5/05	10/7/05	2

58845	12/19	12/21/05	2
58701	12/6	12/7	1
58775	12/2-3	12/14/05	12/13/05 extraction date
58668	12/2	12/5/05	3
58640	11/30	12/1/05	1
58593	11/23	11/28	5
58570	11/22/21	11/23	1-2
58526	11/18-17	11/18	1
58494	11/16/05	11/17	
58420	11/9/05	11/11/05	2

58196	10/24/25	10/26
58116	10/18/25	10/20
57988	10/11/05	10/12
57950	10/6/7	10/10

ORGANIC DATA VALIDATION SUMMARY

Acceptable
Yes No

4. Instrument Performance . . . . . N/A

___DDT Retention Time Acceptable (packed columns) / Resolution Acceptable (All Columns) (if no, R detects)
___Standard Checks within Retention Time Window (if no, check against expended windows and if outside, qualify R/UR)
___DDT and/or Endrin Breakdowns >20% (J/UR DDT and Endrin, NJ all breakdown product hits)
___DBC, TCMX or DCBP retention time checks within SOW limits (if no, R/UR)

Comments/Qualified Results: _____

5. Initial and Continuing Calibration . . . . . N/A

GC/MS Data
___Initial calibration performed
___Initial calibration RRFs ≥0.05 for all compounds (if no, J/UR)
___Initial calibration RSDs ≤30% for all compounds (if no, J/UJ)
___Continuing calibration performed
___Continuing calibration RRFs ≥0.05 for all compounds (if no, J/UR)
___Continuing calibration %Ds ≤25% for all compounds (if no, J/UJ)
Pesticide/PCB data
___RSD ≤10% for performance checks (if no, J detects)
___All standards analyzed prior to sample analysis, confirmation standards analyzed at proper frequency
___Continuing calibration %D ≤15% for quantitation (≤20% for confirmation) (if no, J all detects)

Comments/Qualified Results: _____

6. Blanks . . . . . ✓ ___

✓ Method blanks analyzed
Common Laboratory Contaminants Detected
___Methylene choride ___Toluene
___Acetone detected ___2-Butanone
___Phthalates detected (list or attach summary sheet) _____
___TICs detected (list or attach summary sheet) _____
Qualify sample results <10x above as U at SQL
Non-common Laboratory Contaminants
___Other TCL compounds detected (list or attach summary sheet) _____
Qualify sample results <5x above as U at SQL

Comments/Qualified Results: some questions on Reporting limits for BTEX blank (reports 57803, 57784). Why is 6x @ 250 ug/kg.? Wy'East indicate 2/17/06 ~~qualifiers~~ RL raised at their discretion discretion.

Jm 2/20/2006

ORGANIC DATA VALIDATION SUMMARY

Acceptable Yes / No

7. Surrogates. . . . . Yes / No

Note: Surrogate limits apply if at least one volatile or pesticide/PCB surrogate is out of specification and at least two semivolatile surrogates are out of specification.

✓ Surrogates analyzed
__ Surrogate recoveries within method control limits
__ Surrogate recoveries above method control limits (J detects only)
__ Surrogate recoveries below method control limits but ≥10% (J/UJ)
__ Surrogate recoveries below 10% (J/UR)

[Dx] 2-fluorobiphenyl
[Gx BETX] p-Bromofluorobenzene

MB Blank surrogate recovery was NOT reported for Dx, Gx, BETX. Contacted lab 2/16 via e-mail to find out why - apparently surr % recoveries calculated from MB % recovery on ~~Dx~~. NWTPH-Gx. No action taken on this basis.

8. Matrix Spike/Matrix Spike Duplicate . . . . . __ __

LCS only

✓ MS/~~MSD~~ analyzed
✓ MS/~~MSD~~ recoveries within method control limits
__ MS/MSD recoveries above method control limits (J detects only)
__ MS/MSD recoveries below method control limits but ≥10% (J/UJ)
__ MS/MSD recoveries below 10%, and surrogates are out (J/UR)

57892 (LCS1) NWTPH-Dx

Comments/Qualified Results: No spike provided for Gx/BTEX data. Wy'East on 2/18/2006 provided BS data for NWTPH-Gx. Dx - NO spike necessary although Wy'East provide this 2/17/2006.

9. Internal Standards Performance . . . . . NA

__ Internal standards added to all samples and QC
__ Internal standard areas within control limits
__ Internal standard areas outside control limits but greater than 10% (J/UJ)
__ Internal standard areas are zero or less than 10% (J/UR)
__ Internal standard RTs within ±30 second windows (if no, J/UJ)

Comments/Qualified Results:

10. Compound Identification . . . . . __ __

__ Library search data provided for positive results (if no and data is required, request from the laboratory)
__ Positive results within RT criteria for dual column confirmation (Pesticide/PCB data only) (if no, qualify detects as U)
__ Compound ID within ±0.06 RRT of standard (if no, qualify as J if spectral match okay)
__ Mass spectral match acceptable (if no, qualify as R)

Comments/Qualified Results: 57852 - Ex-1-SWMB-1(4) gas @ 319 J qualified, diesel 3,670
Ex-1-SWMB-35(6) gas @ 67 J qualified, diesel 4 714.

ORGANIC DATA VALIDATION SUMMARY

Acceptable
Yes No

11. Tentatively Identified Compounds (TIC) . . . . . NA

___TIC's searched (10/20 largest non-Aldol VOA's/Semi-VOA's)
___TIC's identified properly
___TIC's present in blank and samples (qualify according to 5x rule)
___Common laboratory contaminants reported as TIC's (qualify the following as rejected [CO_2 (m/z 44), siloxanes (m/z 73), diethyl ether, hexane, freons, phthalates <100 ug/L or <4000 ug/Kg, cyclohexene derivatives, aldols or hydroxy ketones and hydroxy aldehydes])
___Qualify valid TICs as JN

Comments/Qualified Results:_____

12. Result Verification . . . . . NA

___All results supported in raw data
___Transcription errors identified (note constituent(s) and changes below)
___Calculation errors identified (note constituent(s) and changes below)

Comments/Qualified Results:_____

13. Detection Limits . . . . . ✓ ___

___Sample quantitation limits (SQLs) meet the project requirements (note discrepancies below)

Comments/Qualified Results: Ø dry wt RL NOT reported. Results reported ND. No action see attached for individual sample dry wt results.

14. System Performance . . . . . NA

___Baseline anomalies noted which affect quantitation (J/UJ)
___High background MS levels noted which affect quantitation (J/UJ)
___Extraneous or coeluting peaks effecting quantitation (J/UJ)
___Poor resolution (J/UJ)
___Peak tailing/peak splitting affecting quantitation (J/UJ)

Comments/Qualified Results:_____

WyEast calculates "dry weight percent" for DX and GX samples containing contamination. Moisture percent = 100%-DW%. For clean samples, dry weight correction of results is not applicable. Therefore, for some clean samples, DW% was not calculated. (Denoted by N/A)

Report #	Lab ID#	DW%
57784	P1821	N/A
↓	P1822	N/A
↓	P1823	N/A
↓	P1824	N/A
57803	P1896	86%
↓	P1897	84%
↓	P1898	81%
↓	P1899	81%
↓	P1900	82%
↓	P1901	84%
↓	P1902	82%
↓	P1903	78%
57851	P2186	83%
↓	P2187	83%
↓	P2188	92%
↓	P2189	84%
↓	P2190	81%
↓	P2191	81%
↓	P2192	82%
↓	P2193	77%
57852	P2194	83%
↓	P2195	81%
↓	P2196	84%
↓	P2197	80%
↓	P2198	77%
↓	P2199	82%
↓	P2200	83%
↓	P2201	80%
↓	P2202	81%
↓	P2203	80%
↓	P2204	80%
↓	P2205	78%
57892	P2332	86%
↓	P2333	85%
↓	P2334	86%
↓	P2335	96%
↓	P2336	79%
↓	P2337	76%
↓	P2338	57%
↓	P2339	81%
57931	P2535	71%
↓	P2536	75%
↓	P2537	71%
↓	P2538	76%
↓	P2539	80%
↓	P2540	86%
↓	P2541	92%
57950	P2592	81%
↓	P2593	83%
↓	P2594	76%
↓	P2595	81%
↓	P2596	78%

Rinse 57-92

Report #	Lab ID#	DW%
57988	P2707	72%
↓	P2708	82%
↓	P2709	82%
↓	P2710	85%
↓	P2711	76%
↓	P2712	78%
↓	P2713	70%
58116	P3071	N/A
↓	P3072	N/A
↓	P3073	N/A
↓	P3074	N/A
↓	P3075	N/A
58196	P3376	81%
↓	P3377	85%
↓	P3378	58%
↓	P3379	47%
↓	P3380	71%
↓	P3381	86%
↓	P3382	72%
↓	P3383	72%
↓	P3384	88%
↓	P3385	72%
58420	P4114	84%
58499	P4393	90%
↓	P4394	85%
58526	P4480	81%
↓	P4481	79%
↓	P4482	89%
↓	P4483	70%
↓	P4484	70%
58570	P4614	83%
↓	P4615	80%
↓	P4616	87%
↓	P4617	81%
58593	P4715	N/A
↓	P4716	N/A
↓	P4717	N/A
↓	P4718	N/A
58668	P4929	86%
↓	P4930	80%
↓	P4931	83%
↓	P4932	80%
↓	P4933	59%
58640	P4851	80%
↓	P4852	76%
58701	P5014	80%
↓	P5015	86%
↓	P5016	78%
↓	P5017	89%
58775	P5263	91%
↓	P5264	88%

ORGANIC DATA VALIDATION SUMMARY

15. Overall Assessment

Comments/Qualified Results:

NWTPH Dx – NO Field Dups w/exception of 57784
– ~~Surrogate % Recovery Calculated~~ Splits ~~from MB~~. No apparently from NWTPH-Gx.
– Chain does NOT indicate cooler receipt condition, 1 chain NOT signed by lab
– No Precision Provided
– Accuracy in the form of LCS NOT required by method. Only one provided.
– Accuracy in the form of surr calculated against blank recovery

J/UJ All ⊕ Dx data
J/UJ ⊕ NWTPH Gx / BETX data
No precision data on 57803, 57851, 57852, 57892, 57931

– No precison/accuracy data provided.
– No Field Dups
– Surrogate recovery calc questionable for NWTPH-Gx
– temp on cooler not documented

J/UJ

– Compound ID on 2 Samples qualified questionable (57852) J/UJ

– Dry Wt results were faxed upon request. "NOT performed on "clean samples" Still enough of an idea to get an idea of % moisture range.

Rebecca Purcell
Cornelius Chan

Report Number 1271-1

WyEast
Environmental Sciences, Inc.

Research & Laboratory Services

CHAIN OF CUSTODY

2415 SE 11th Ave. • Portland, Oregon 97214 • (503) 231-9320 • FAX (503) 231-9344

PROJECT # 003-1335-002	PROJECT NAME / SITE Moses Lake NLF	STATE WA	PURCHASE ORDER #
COMPANY Golder	REPORT ATTENTION Ted Norton	PHONE NUMBER (425) 883-0777	FAX NUMBER (425) 882-5498
SAMPLES COLLECTED BY Paul Van Middlesworth	DATE(S) COLLECTED 9/26/05	TIME(S) COLLECTED	SAMPLES CHILLED TO 4° C?
PRESERVATIVE USED? (HCl, etc.)			Regular ☐ 3-5 Days ☐ *SAME DAY TURNAROUND

FIELD ID	MEDIA	CONTAINER	VOLUME ETC	ANALYSIS REQUIRED	LAB ID
EX-1-B(2) 9/26/05 15:35	S	2		NWTPH-Gx/BTEX, NWTPH-Dx	
EX-1-C(7) 9/26/05 15:25	S	2		↓	
EX-1-D(8) 9/26/05 15:00	S	2		↓	
EX-1-E(8) 9/26/05 15:15	S	2		↓	

RELINQUISHED BY Paul Van Middlesworth	DATE / TIME 9/27/05 16:00	RECEIVED BY	DATE / TIME
RELINQUISHED BY	DATE / TIME	RECEIVED BY LAB	DATE / TIME

Submission of samples with testing requirements to WyEast Environmental Sciences will be understood to be an agreement for services in accordance with the conditions listed on the back of the client copy

see report 5

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FACSIMILE COVER PAGE

To : Ted Norton
From : Rebecca
Sent : 9/29/2005 at 11:30:34 AM
Pages : 3 (including Cover)
Subject :

Steve VanSant
Fax 509-926-3687

Report 57784
9/29
Final

Report Number: _____

WyEast
Environmental Sciences, Inc.

Research & Laboratory Services

CHAIN OF CUSTODY

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PROJECT #	PROJECT NAME / SITE	STATE	PURCHASE ORDER #
003-1335-002	Moses Lake NF	WA	
COMPANY	**REPORT ATTENTION**	**PHONE NUMBER**	**FAX NUMBER**
Golder	Ted Norton / Doug Morell	(425) 885-0777	
SAMPLES COLLECTED BY	**DATE(S) COLLECTED**	**TIME(S) COLLECTED**	**SAMPLES CHILLED TO 4° C?**
Paul VanMiddlesworth	9/29/05		
PRESERVATIVE USED? (HCl, etc.)			Regular ☐ 3-5 Days ☐

FIELD ID	MEDIA	CONTAINER	VOLUME ETC	ANALYSIS REQUIRED	LAB ID
EX-1-SWMB-40(8)	Soil	2	9/29/05, 14:35	NWTPH-G/BTEX, NWTPH-Dx	P2186
EX-1-SWMB-45(8)	↓	↓	14:45	↓	P2187
EX-1-SWMB-50(8)			14:55		P2188
EX-1-SWMB-55(5)			15:05		P2189
EX-1-SWMB-60(4)			15:10		P2190
EX-1-SWMB-65(4)			16:10		P2191
EX-1-SWMB-70(4)			16:20		P2192
EX-2-0929-K(6)			15:20		P2193

RELINQUISHED BY	DATE / TIME	RECEIVED BY	DATE / TIME
Paul VanMiddlesworth	9/30/05 16:00		
RELINQUISHED BY	**DATE / TIME**	**RECEIVED BY LAB**	**DATE / TIME**
		Ellen Lee	10/3/05 9:35

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Rec'd 10/7/05 PVM

por mb

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PROJECT # 003-1335-002	PROJECT NAME / SITE Moses Lake WA	STATE WA	PURCHASE ORDER #
COMPANY Golder	REPORT ATTENTION Doug Morell / Ted Norton	PHONE NUMBER	FAX NUMBER
SAMPLES COLLECTED BY [signature]	DATE(S) COLLECTED 9/30/05	TIME(S) COLLECTED	SAMPLES CHILLED TO 4° C?
PRESERVATIVE USED? (HCl, etc.)			Regular ☐ 3-5 Days ☐

FIELD ID	MEDIA	CONTAINER	VOLUME ETC	ANALYSIS REQUIRED	LAB ID
EX-1-SWMB-1(4)	Soil	2	9/30/05, 14:00	NWTPH-G/BTEX, NWTPH-D	P2194
EX-1-SWMB-5(4)			,14:10		P2195
EX-1-SWMB-10(4)			,14:20		P2196
EX-1-SWMB-15(5)			,14:30		P2197
EX-1-SWMB-20(5)			,14:40		P2198
EX-1-SWMB-25(5)			,14:50		P2199
EX-1-SWMB-30(6)			,15:00		P2200
EX-1-SWMB-35(6)			,15:10		P2201
EX-2-25N-50E-4			,15:30		P2202
EX-2-25N-100E-4			,15:40		P2203
EX-2-50N-125E-4			,15:50		P2204
EX-2-60N-125E-4	↓	↓	,16:00	↓	P2205

RELINQUISHED BY [signature]	DATE / TIME 9/30/05 16:00	RECEIVED BY	DATE / TIME
RELINQUISHED BY	DATE / TIME	RECEIVED BY LAB [signature] 10/3/05	DATE / TIME 9:35 AM

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Report Number: 1 5 / 8 3 2

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PROJECT # 033-1335-002	PROJECT NAME / SITE Moses Lake MF	STATE WA	PURCHASE ORDER #
COMPANY Golder	REPORT ATTENTION Steve VanShaar / Paul VanMiddlesworth	PHONE NUMBER (208) 755-3002	FAX NUMBER (509) 766-3615
SAMPLES COLLECTED BY P.VanMiddlesworth / S.VanShaar	DATE(S) COLLECTED 10/3/05, 10/4/05	TIME(S) COLLECTED	SAMPLES CHILLED TO 4° C?
PRESERVATIVE USED? (HCl, etc.)			Regular ☐ 3-5 Days ☐

FIELD ID	MEDIA	CONTAINER	~~VOLUME ETC~~ Date, Time	ANALYSIS REQUIRED	LAB ID
EX-2-25N-50E-7	S	2	10/4/05, 15:40	NWTPH-Gx/BTEX, NWTPH-Dx	P2332
EX-2-50N-75E-6	S	2	10/3/05, 15:50		P2333
EX-2-75N-140E-2WALL	S	2	10/4/05, 14:00		P2334
EX-2-100N-130E-3WALL	S	2	10/4/05, 14:10		P2335
EX-2-75N-50E-6(B)	S	2	10/4/05, 14:20		P2336
EX-2-90N-50E-7(B)	S	2	10/4/05, 14:30		P2337
EX-2-25N-100E-5WALL	S	2	10/4/05, 14:40		P2338
EX-2-50N-125E-3WALL	S	2	10/4/05, 14:50		P2339

RELINQUISHED BY Paul VanMiddlesworth	DATE / TIME 10/4/05 / 15:30	RECEIVED BY	DATE / TIME
RELINQUISHED BY	DATE / TIME	RECEIVED BY LAB Erika Miller 10/5/05	DATE / TIME 10:05

Submission of samples with testing requirements to WyEast Environmental Sciences will be understood to be an agreement for services in accordance with the conditions listed on the back of the client copy

1/ 5

NW-TPHDx Quality Control Report

Batch ID: Dx-051005-A1
Batch Date: 10/05/05

Blank Quality Control

	Sample ID	Result (mg/Kg)	Acceptable Result	Surrogate Recovery	Acceptable Surrogate Recovery
Reagent Blank	LRB	0	<10 mg/Kg	123%	50%-150%
Matrix Blank	SBlank1	0	<10 mg/Kg	99%	50%-150%

Spike Quality Control

	Sample ID	Theoretical Spike Result (mg/Kg)	Spiked Sample Result (mg/Kg)	Spike Recovery %	Acceptable Spike Recovery%
Matrix Spike	LCS1	157	171	109%	70%-130%

Continuing Calibration Quality Control

Analyte	Sample ID	Continuing C.f.	5 point C.f.	Percent Difference	Acceptable Range
Diesel	CCVD	38.3	40.5	-5%	± 15%
Heavy Oil	CCVO	15.1	15.3	-1%	± 15%

NW-TPHDx Quality Control Report

Batch ID: Dx-051005-C1
Batch Date: 10/05/05

Blank Quality Control

	Sample ID	Result (mg/Kg)	Acceptable Result	Surrogate Recovery	Acceptable Surrogate Recovery
Reagent Blank	LRB	0	<10 mg/Kg	73%	50%-150%
Matrix Blank	SBlank1	0	<10 mg/Kg	116%	50%-150%

Spike Quality Control

	Sample ID	Theoretical Spike Result (mg/Kg)	Spiked Sample Result (mg/Kg)	Spike Recovery %	Acceptable Spike Recovery%
Matrix Spike	LCS1	157	184	117%	70%-130%

Continuing Calibration Quality Control

Analyte	Sample ID	Continuing C.f.	5 point C.f.	Percent Difference	Acceptable Range
Diesel	CCVD	6520.7	7223.7	-10%	± 15%
Heavy Oil	CCVO	3094.6	3639.1	-15%	± 15%

Report Number:

WyEast
Environmental Sciences, Inc.

Research & Laboratory Services

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PROJECT # 033-1335-002	PROJECT NAME / SITE Moses Lake MF	STATE WA	PURCHASE ORDER #
COMPANY Golder	REPORT ATTENTION Steven VanShaar	PHONE NUMBER 206-617-6125	FAX NUMBER 509-766-3615
SAMPLES COLLECTED BY PMW/SRV	DATE(S) COLLECTED 10/5/05	TIME(S) COLLECTED	SAMPLES CHILLED TO 4° C?
PRESERVATIVE USED? (HCl, etc.)			Regular ☐ 3-5 Days ☐ Same Day

FIELD ID	MEDIA	CONTAINER	~~VOLUME ETC~~ Date, Time	ANALYSIS REQUIRED	LAB ID
EX-2-50N-10W-7B	S	2	10/5 14:00	NWTPH-Gx/BTEX, NWTPH-Dx	P2535
EX-2-50N-40W-6B	↓	↓	14:10	↓	P2536
EX-2-50N-60W-7B	↓	↓	14:20	↓	P2537
EX-2-120N-50E-6B	↓	↓	15:30	↓	P2538
EX-1-M-4W	↓	↓	17:30	↓	P2539
EX-1-N-4W	↓	↓	17:40	↓	P2540
EX-1-P-5W	↓	↓	17:50	↓	P2541

RELINQUISHED BY Steven VanShaar	DATE / TIME 10/5/05 16:20	RECEIVED BY	DATE / TIME
RELINQUISHED BY	DATE / TIME	RECEIVED BY LAB	DATE / TIME 10/7/05 11:00 AM

Submission of samples with testing requirements to WyEast Environmental Sciences will be understood to be an agreement for services in accordance with the conditions listed on the back of the client copy

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30 pages

2/17/06
Attention Jessie

2. Sample Surrogate Method Blank Recovery

For Dx: Surrogate recovery is calculated as the ratio of measured surrogate in the extract to theoretical surrogate in the extract. Measured surrogate recovery is calculated by a calibration factor generated from a 5-point calibration curve.

For Gx: For each analytical batch, the blank is used as the standard by which the surrogate recoveries of the samples are calculated. By definition, the surrogate recovery of each blank will be 100%.

3. MS/MSD Samples for GX

Enclosed is a summary of the pertinent matrix spike data. Where a Matrix Spike was run, the sample name is followed by "SD" (Spike Duplicate). Where a duplicate was run, the sample name is followed by "D". Please note, Wy'East mistakenly ran a Matrix Spike on P5014 instead of P5015. Sample P5537's unusually high spike recovery was thought to be due to the fact that it was spiked at a low concentration. Any carryover contamination would have a disproportionate effect on the spike recovery.

4 & 5. Dx & Gx QC Data

Field duplicates were taken, and are identified as such by Golder on the chain of custody documentation, under the column "Field ID". (Samples with identical Field ID's except for the addition of a "D" to the end of one sample). These samples were run blind (we didn't treat them as duplicates, each sample had a unique sample ID and was analyzed as a unique sample). Wy'East received no request for additional data workup of field duplicates.

Enclosed are the NWTPH-Dx QC reports associated with these samples. When more than one QC report is associated with a batch of samples, the reports have been amended to reflect specifically which sample is associated with each QC report.

For Gx, Wy'East is working on compiling the pertinent QC data. Possibly by Monday morning?

7. Gx Detection Limit

These first two sets of samples were collected and analyzed differently than the others. The samples associated with reports 57803 and 57784 were brought in to Wy'East as 5 grams of soil in 5 mL (=5 g) of water. The water samples were analyzed as per the 8021B/5035A method for water, with a reporting limit of 250 ug/L. The results were then converted from ug/L in water to ug/Kg in soil. The remainder of the samples were brought in as soil in methanol, and were analyzed by the soil method. Soil detection limit for gasoline is 20 mg/Kg (ppm).

The discrepancy in BTEX reporting limit is due to the same difference in sampling and analysis as for the Gx. The water detection limit for BTEX is 1 ug/L. For report 57784, Wy'East raised the more conservative detection limit of 2 ug/L, at our discretion.

Please note: As mentioned above, we are currently compiling the pertinent QC data for GX samples, we will get them to you as soon as possible, with a goal of Monday morning.

? < 20 mg/kg

	Result (mg/Kg)		Result (mg/Kg)	Theoretical Spike Concentration (mg/Kg)	Spike Relative % Recovery
P3385	2	P3385SD	90	109	83%
P4482	2	P4482SD	130	88	147%
P4615	4	P4615SD	121	93	131%
P4851	6	P4851SD	107	81	132%
P5014**	2	P5014SD	103	84	122%
P5537	3	P5537SD	48	30	161%

	Result (ug gasoline/mL solvent) in extract		Result (ug gasoline/mL solvent) in extract	Theoretical Result (ug gasoline/mL solvent) in extract	Spike Relative % Recovery
P4930	2	P4930SD	75	53	141%

	Result (mg/Kg)		Result (mg/Kg)	Duplicate Recovery
P3383	ND	P3383D	ND	ND=ND

**Please note, P5014 was spiked instead of P5015 by mistake.

Wy'East Environmental Sciences, Inc.

LABORATORY REPORT
Revised to Reflect QC REPORT NUMBER

Golder Associates
Attn: Ted Norton
1200 W. Ironwood Dr.
Coeur d'Alene, ID 83814

PROJECT NAME/SITE:	Moses Lake M F	**REPORT NUMBER:**	57784
PROJECT NUMBER:	003-1335-002	**REPORT DATE:**	9-29-05
EXTRACTION DATE:	9-27-05	**PAGE:**	1 of 2
QC REPORT NUMBER	Dx-050927-A1		

NWTPH-Dx
Analyte: Total Petroleum Hydrocarbon Quantification for soil (dry weight basis)

Field ID	Lab ID	Diesel mg/Kg (ppm)	Heavy Oil mg/Kg (ppm)	Surrogate Recovery (%)
EX-1-B (2)	P1821	**ND**	**ND**	78
EX-1-C (7)	P1822	**ND**	**ND**	74
EX-1-D (8)	P1823	**ND**	**ND**	86
EX-1-E (8)	P1824	**ND**	**ND**	78
BLANK	-	ND	ND	-
Reporting Limit	-	25	100	-

Surrogate is 2-fluorobiphenyl
ND = Not Detected (below reporting limit or detection limit)

NWTPH-Gx/5035A
Analyte: Total Petroleum Hydrocarbon Quantification for soil (dry weight basis)

Field ID	Lab ID	Matrix	µg/Kg (ppb)	Surrogate Recovery (%)
EX-1-B (2)	P1821	SOIL	**ND**	62
EX-1-C (7)	P1822	SOIL	**ND**	63
EX-1-D (8)	P1823	SOIL	**ND**	63
EX-1-E (8)	P1824	SOIL	**ND**	65
BLANK	-	-	ND	-
Reporting Limit	-	-	250	-

Surrogate is p-Bromofluorobenzene
ND = Not Detected (below reporting limit or detection limit)

Wy'East Wy'East Environmental Sciences, Inc.

NW-TPHDx Quality Control Report

Batch ID: Dx-050927-A1
Batch Date: 09/27/05

Blank Quality Control

	Sample ID	Result (mg/Kg)	Acceptable Result	Surrogate Recovery	Acceptable Surrogate Recovery
Reagent Blank	LRB	0	<10 mg/Kg	71%	50%-150%
Matrix Blank	SBlank1	0	<10 mg/Kg	72%	50%-150%

Spike Quality Control

	Sample ID	Theoretical Spike Result (mg/Kg)	Spiked Sample Result (mg/Kg)	Spike Recovery %	Acceptable Spike Recovery%
Matrix Spike	LCS1	159	169	106%	70%-130%

Continuing Calibration Quality Control

Analyte	Sample ID	Continuing C.f.	5 point C.f.	Percent Difference	Acceptable Range
Diesel	CCVD	36.7	40.5	-9%	± 15%
Heavy Oil	CCVO	10.5	15.3	-31%	± 15%

Heavy Oil Standard does not pass QC standards, any samples containing oil must be rerun.
For soil samples run on instrument A, Oil MDL = 7.34 mg/Kg. Lower reporting limit =100 mg/Kg.

Wy'East Environmental Sciences, Inc.

REVISED LABORATORY REPORT

Golder Associates
Attn: Ted Norton
1200 W. Ironwood Dr., #102
Coeur d'Alene, ID 83814

PROJECT NAME/SITE:	Moses Lake Maint. Facility	**REPORT NUMBER:**	57803
PROJECT NUMBER:	003-1335-002	**REPORT DATE:**	9-30-05
EXTRACTION DATE:	9-29-05	**PAGE:**	1 of 2
QC REPORT NUMBER:	Dx-050929-C2 Dx-050929-A1		

NWTPH-Dx (QC Batch Dx-050929-A1)
Analyte: Total Petroleum Hydrocarbon Quantification for soil (dry weight basis)

Field ID	Lab ID	Diesel mg/Kg (ppm)	Heavy Oil mg/Kg (ppm)	Surrogate Recovery (%)
EX-2-0928-H (5)	P1898	**ND**	**ND**	79
EX-1-SWMB-40 (8)	P1900	**72**	**ND**	93
EX-1-SWMB-60 (4)	P1901	**111**	**ND**	87
EX-1-0928-G (7)	P1902	**ND**	**ND**	67
EX-1-0928-F (8)	P1903	**ND**	**ND**	64
BLANK	-	ND	ND	-
Reporting Limit	-	25	100	-

Surrogate is 2-fluorobiphenyl
ND = Not Detected (below reporting limit or detection limit)

NWTPH-Dx (QC Batch Dx-050929-C2)
Analyte: Total Petroleum Hydrocarbon Quantification for soil (dry weight basis)

Field ID	Lab ID	Diesel mg/Kg (ppm)	Heavy Oil mg/Kg (ppm)	Surrogate Recovery (%)
EX-2-0928-C (4)	P1896	**ND**	**731**	101
EX-2-0928-F (4)	P1897	**ND**	**7,000**	101
EX-2-0928-J (6)	P1899	**ND**	**5,340**	97
BLANK	-	ND	ND	-
Reporting Limit	-	25	100	-

Surrogate is 2-fluorobiphenyl
ND = Not Detected (below reporting limit or detection limit)

Wy'East Environmental Sciences, Inc.

REVISED LABORATORY REPORT

Golder Associates
Attn: Ted Norton
1200 W. Ironwood Dr., #102
Coeur d'Alene, ID 83814

PROJECT NAME/SITE:	Moses Lake Maint Facility	**REPORT NUMBER:**	57803
PROJECT NUMBER:	003-1335-002	**REPORT DATE:**	9-30-05
EXTRACTION DATE:	9-29-05	**PAGE:**	2 of 2

NWTPH-Gx/5035A
Analyte: Total Petroleum Hydrocarbon Quantification for soil (dry weight basis)

Field ID	Lab ID	Matrix	µg/Kg (ppb)	Surrogate Recovery (%)
EX-2-0928-C (4)	P1896	SOIL	**ND**	100
EX-2-0928-F (4)	P1897	SOIL	**ND**	114
EX-2-0928-H (5)	P1898	SOIL	**ND**	102
EX-2-0928-J (6)	P1899	SOIL	**ND**	103
EX-1-SWMB-40 (8)	P1900	SOIL	**583**	118
EX-1-SWMB-60 (4)	P1901	SOIL	**ND**	116
EX-1-0928-G (7)	P1902	SOIL	**ND**	101
EX-1-0928-F (8)	P1903	SOIL	**ND**	108
BLANK	-	-	ND	-
Reporting Limit	-	-	250	-

Surrogate is p-Bromofluorobenzene
ND = Not Detected (below reporting limit or detection limit)

EPA 8021B/5035A
Analyte: BTEX for soil (Benzene, Toluene, Ethylbenzene, Xylenes)

Field ID	Lab ID	Identification & Quantification µg/Kg (ppb)				Surrogate Recovery (%)
		Benzene	Toluene	Ethyl-Benzene	Xylenes	
EX-2-0928-C (4)	P1896	**ND**	**ND**	**ND**	**ND**	100
EX-2-0928-F (4)	P1897	**ND**	**ND**	**ND**	**ND**	114
EX-2-0928-H (5)	P1898	**ND**	**ND**	**ND**	**ND**	102
EX-2-0928-J (6)	P1899	**ND**	**ND**	**ND**	**1**	103
EX-1-SWMB-40 (8)	P1900	**ND**	**ND**	**1**	**1**	118
EX-1-SWMB-60 (4)	P1901	**ND**	**ND**	**ND**	**ND**	116
EX-1-0928-G (7)	P1902	**ND**	**ND**	**ND**	**ND**	101
EX-1-0928-F (8)	P1903	**ND**	**ND**	**ND**	**ND**	108
BLANK	-	ND	ND	ND	ND	-
Quantification Limits	-	1	1	1	1	-

Surrogate is p-Bromofluorobenzene
ND = Not Detected (below reporting limit or detection limit)

Wy'East Wy'East Environmental Sciences, Inc.

NW-TPHDx Quality Control Report

Batch ID: Dx-050929-C2
Batch Date: 09/29/05

Blank Quality Control

	Sample ID	Result (mg/Kg)	Acceptable Result	Surrogate Recovery	Acceptable Surrogate Recovery
Reagent Blank	LRB	0	<10 mg/Kg	99%	50%-150%
Matrix Blank	SBlank2	0	<10 mg/Kg	96%	50%-150%

Spike Quality Control

	Sample ID	Theoretical Spike Result (mg/Kg)	Spiked Sample Result (mg/Kg)	Spike Recovery %	Acceptable Spike Recovery%
Matrix Spike	LCS2	159	156	98%	70%-130%

Continuing Calibration Quality Control

Analyte	Sample ID	Continuing C.f.	5 point C.f.	Percent Difference	Acceptable Range
Diesel	CCVD	6571.4	7223.7	-9%	± 15%
Heavy Oil	CCVO	3366.9	3639.1	-7%	± 15%

Wy'East Environmental Sciences, Inc.

NW-TPHDx Quality Control Report

Batch ID: Dx-050929-A1
Batch Date: 09/29/05

Blank Quality Control

	Sample ID	Result (mg/Kg)	Acceptable Result	Surrogate Recovery	Acceptable Surrogate Recovery
Reagent Blank	LRB	0	<10 mg/Kg	74%	50%-150%
Matrix Blank	SBlank1	0	<10 mg/Kg	76%	50%-150%

Spike Quality Control

	Sample ID	Theoretical Spike Result (mg/Kg)	Spiked Sample Result (mg/Kg)	Spike Recovery %	Acceptable Spike Recovery%
Matrix Spike	LCS1	159	169	106%	70%-130%

Continuing Calibration Quality Control

Analyte	Sample ID	Continuing C.f.	5 point C.f.	Percent Difference	Acceptable Range
Diesel	CCVD	36.3	40.5	-10%	± 15%
Heavy Oil	CCVO	11.9	15.3	-22%	± 15%

Heavy Oil Standard does not pass QC standards, any samples containing oil must be rerun
For samples run on instrument A, Oil MDL = 7.34 mg/Kg. Lower reporting limit = 100 mg/Kg

Wy'East Environmental Sciences, Inc.

NW-TPHDx Quality Control Report

Batch ID: Dx-051003-A1
Batch Date: 10/03/05

Blank Quality Control

	Sample ID	Result (mg/Kg)	Acceptable Result	Surrogate Recovery	Acceptable Surrogate Recovery
Reagent Blank	LRB	0	<10 mg/Kg	73%	50%-150%
Matrix Blank	SBlank1	0	<10 mg/Kg	86%	50%-150%

Spike Quality Control

	Sample ID	Theoretical Spike Result (mg/Kg)	Spiked Sample Result (mg/Kg)	Spike Recovery %	Acceptable Spike Recovery%
Matrix Spike	LCS1	159	173	109%	70%-130%

Continuing Calibration Quality Control

Analyte	Sample ID	Continuing C.f.	5 point C.f.	Percent Difference	Acceptable Range
Diesel	CCVD	36.8	40.5	-9%	± 15%
Heavy Oil	CCVO	15.1	15.3	-1%	± 15%

Wy'East Environmental Sciences, Inc.

NW-TPHDx Quality Control Report

Batch ID: Dx-051003-C1
Batch Date: 10/03/05

Blank Quality Control

	Sample ID	Result (mg/Kg)	Acceptable Result	Surrogate Recovery	Acceptable Surrogate Recovery
Reagent Blank	LRB	0	<10 mg/Kg	103%	50%-150%
Matrix Blank	SBlank1	0	<10 mg/Kg	107%	50%-150%

Spike Quality Control

	Sample ID	Theoretical Spike Result (mg/Kg)	Spiked Sample Result (mg/Kg)	Spike Recovery %	Acceptable Spike Recovery%
Matrix Spike	LCS1	159	182	115%	70%-130%

Continuing Calibration Quality Control

Analyte	Sample ID	Continuing C.f.	5 point C.f.	Percent Difference	Acceptable Range
Diesel	CCVD	6579.1	7223.7	-9%	± 15%
Heavy Oil	CCVO	3192.8	3639.1	-12%	± 15%

Wy'East Environmental Sciences, Inc.

NW-TPHDx Quality Control Report

Batch ID: Dx-051005-A1
Batch Date: 10/05/05

Blank Quality Control

	Sample ID	Result (mg/Kg)	Acceptable Result	Surrogate Recovery	Acceptable Surrogate Recovery
Reagent Blank	LRB	0	<10 mg/Kg	123%	50%-150%
Matrix Blank	SBlank1	0	<10 mg/Kg	99%	50%-150%

Spike Quality Control

	Sample ID	Theoretical Spike Result (mg/Kg)	Spiked Sample Result (mg/Kg)	Spike Recovery %	Acceptable Spike Recovery%
Matrix Spike	LCS1	157	171	109%	70%-130%

Continuing Calibration Quality Control

Analyte	Sample ID	Continuing C.f.	5 point C.f.	Percent Difference	Acceptable Range
Diesel	CCVD	38.3	40.5	-5%	± 15%
Heavy Oil	CCVO	15.1	15.3	-1%	± 15%

Wy'East Environmental Sciences, Inc.

NW-TPHDx Quality Control Report

Batch ID: Dx-051005-C1
Batch Date: 10/05/05

Blank Quality Control

	Sample ID	Result (mg/Kg)	Acceptable Result	Surrogate Recovery	Acceptable Surrogate Recovery
Reagent Blank	LRB	0	<10 mg/Kg	73%	50%-150%
Matrix Blank	SBlank1	0	<10 mg/Kg	116%	50%-150%

Spike Quality Control

	Sample ID	Theoretical Spike Result (mg/Kg)	Spiked Sample Result (mg/Kg)	Spike Recovery %	Acceptable Spike Recovery%
Matrix Spike	LCS1	157	184	117%	70%-130%

Continuing Calibration Quality Control

Analyte	Sample ID	Continuing C.f.	5 point C.f.	Percent Difference	Acceptable Range
Diesel	CCVD	6520.7	7223.7	-10%	± 15%
Heavy Oil	CCVO	3094.6	3639.1	-15%	± 15%

Wy'East Environmental Sciences, Inc.

LABORATORY REPORT

Golder Associates
Attn: Steve Van Shaar / Paul Van Middlesworth
1200 W. Ironwood Dr , #102
Coeur d'Alene, ID 83814

PROJECT NAME/SITE: Moses Lake MF
PROJECT NUMBER: 033-1335-002
EXTRACTION DATE: 10-7-05

REPORT NUMBER: 57931
REPORT DATE: 10-11-05
PAGE: 1 of 2

QC REPORT NUMBER: Dx-051007-A1

NWTPH-Dx
Analyte: Total Petroleum Hydrocarbon Quantification for soil (dry weight basis)

Field ID	Lab ID	Diesel mg/Kg (ppm)	Heavy Oil mg/Kg (ppm)	Surrogate Recovery (%)
EX-2-50N-10W-7B	P2535	**ND**	**ND**	70
EX-2-50N-40W-6B	P2536	**ND**	**ND**	68
EX-2-50N-60W-7B	P2537	**ND**	**ND**	66
EX-2-120N-50E-6B	P2538	**ND**	**ND**	64
EX-1-M-4W	P2539	**ND**	**ND**	64
EX-1-N-4W	P2540	**ND**	**ND**	61
EX-1-P-5W	P2541	**ND**	**ND**	61
BLANK	-	ND	ND	-
Reporting Limit	-	25	100	-

Surrogate is 2-fluorobiphenyl
ND = Not Detected (below reporting limit or detection limit)

NWTPH-Gx / 5035A
Analyte: Total Petroleum Hydrocarbon Quantification for soil (dry weight basis)

Field ID	Lab ID	Matrix	mg/Kg (ppm)	Surrogate Recovery (%)
EX-2-50N-10W-7B	P2535	SOIL	**ND**	100
EX-2-50N-40W-6B	P2536	SOIL	**ND**	109
EX-2-50N-60W-7B	P2537	SOIL	**ND**	123
EX-2-120N-50E-6B	P2538	SOIL	**ND**	128
EX-1-M-4W	P2539	SOIL	**ND**	105
EX-1-N-4W	P2540	SOIL	**ND**	107
EX-1-P-5W	P2541	SOIL	**ND**	109
BLANK	-	-	ND	-
Reporting Limit	-	-	20	-

Surrogate is p-Bromofluorobenzene
ND = Not Detected (below reporting limit or detection limit)

Revised to Reflect QC Report #

Wy'East Environmental Sciences, Inc.

LABORATORY REPORT

Golder Associates
Attn: Steve Van Shaar / Paul Van Middlesworth
1200 W. Ironwood Dr., #102
Coeur d'Alene, ID 83814

PROJECT NAME/SITE:	Moses Lake MF	**REPORT NUMBER:**	57931
PROJECT NUMBER:	033-1335-002	**REPORT DATE:**	10-11-05
EXTRACTION DATE:	10-7-05	**PAGE:**	2 of 2

EPA 8021B / 5035A
Analyte: BTEX for soil (Benzene, Toluene, Ethylbenzene, Xylenes)

Field ID	Lab ID	Identification & Quantification mg/Kg (ppm)				Surrogate Recovery (%)
		Benzene	Toluene	Ethyl-Benzene	Xylenes	
EX-2-50N-10W-7B	P2535	**ND**	**0.06**	**ND**	**0.09**	100
EX-2-50N-40W-6B	P2536	**ND**	**ND**	**ND**	**ND**	109
EX-2-50N-60W-7B	P2537	**ND**	**ND**	**ND**	**ND**	123
EX-2-120N-50E-6B	P2538	**ND**	**ND**	**ND**	**ND**	128
EX-1-M-4W	P2539	**ND**	**ND**	**ND**	**ND**	105
EX-1-N-4W	P2540	**ND**	**ND**	**ND**	**ND**	107
EX-1-P-5W	P2541	**ND**	**ND**	**ND**	**ND**	109
BLANK	-	ND	ND	ND	ND	-
Quantification Limits	-	0.04	0.04	0.04	0.04	-

Surrogate is p-Bromofluorobenzene
ND = Not Detected (below reporting limit or detection limit)

Wy'East Environmental Sciences, Inc.

NW-TPHDx Quality Control Report

Batch ID: Dx-051007-A1
Batch Date: 10/07/05

Blank Quality Control

	Sample ID	Result (mg/Kg)	Acceptable Result	Surrogate Recovery	Acceptable Surrogate Recovery
Reagent Blank	LRB	0	<10 mg/Kg	87%	50%-150%
Matrix Blank	SBlank1	0	<10 mg/Kg	113%	50%-150%

Spike Quality Control

	Sample ID	Theoretical Spike Result (mg/Kg)	Spiked Sample Result (mg/Kg)	Spike Recovery %	Acceptable Spike Recovery%
Matrix Spike	LCS1	160	186	116%	70%-130%

Continuing Calibration Quality Control

Analyte	Sample ID	Continuing C.f.	5 point C.f.	Percent Difference	Acceptable Range
Diesel	CCVD	36.1	40.5	-11%	± 15%
Heavy Oil	CCVO	15.2	15.3	0%	± 15%

2415 SE 11th Ave., Portland, Oregon 97214 Phone (503) 231-9320 FAX (503) 231-9344

Wy'East Environmental Sciences, Inc.

NW-TPHDx Quality Control Report

Batch ID: Dx-051010-A1
Batch Date: 10/10/05

Blank Quality Control

	Sample ID	Result (mg/Kg)	Acceptable Result	Surrogate Recovery	Acceptable Surrogate Recovery
Reagent Blank	LRB	0	<10 mg/Kg	63%	50%-150%
Matrix Blank	SBlank1	0	<10 mg/Kg	66%	50%-150%

Spike Quality Control

	Sample ID	Theoretical Spike Result (mg/Kg)	Spiked Sample Result (mg/Kg)	Spike Recovery %	Acceptable Spike Recovery%
Matrix Spike	LCS1	158	140	89%	70%-130%

Continuing Calibration Quality Control

Analyte	Sample ID	Continuing C.f.	5 point C.f.	Percent Difference	Acceptable Range
Diesel	CCVD	24.3	40.5	-40%	± 15%
Heavy Oil	CCVO	11.7	15.3	-23%	± 15%

Continuing Calibration does not meet QC standards this run.
Corrective Action has been taken.

Wy'East Environmental Sciences, Inc.

LABORATORY REPORT
Revised to Reflect QC REPORT NUMBER

Golder Associates
Attn: Steven Van Shaar
1200 W. Ironwood Dr., #102
Coeur d'Alene, ID 83814

PROJECT NAME/SITE:	Moses Lake MF	**REPORT NUMBER:**	57988
PROJECT NUMBER:	033-1335-002	**REPORT DATE:**	10-14-05
EXTRACTION DATE:	10-12-05	**PAGE:**	1 of 2
QC REPORT NUMBER	Dx-051012-A1		

NWTPH-Dx
Analyte: Total Petroleum Hydrocarbon Quantification for soil (dry weight basis)

Field ID	Lab ID	Diesel mg/Kg (ppm)	Heavy Oil mg/Kg (ppm)	Surrogate Recovery (%)
EX-2-180N-130E-3B	P2707	**ND**	**ND**	70
EX-2-125N-150E-2W	P2708	**ND**	**ND**	68
EX-2-190N-135E-2W	P2709	**ND**	**ND**	103
EX-2-180N-70E-3W	P2710	**ND**	**ND**	76
EX-2-140N-100E-4B	P2711	**ND**	**ND**	69
EX-2195N-45E-4W	P2712	**ND**	**366**	94
EX-2-180N-40E-6B	P2713	**ND**	**ND**	69
BLANK	-	ND	ND	-
Reporting Limit	-	25	100	-

Surrogate is 2-fluorobiphenyl
ND = Not Detected (below reporting limit or detection limit)

NWTPH-Gx/5035A
Analyte: Total Petroleum Hydrocarbon Quantification for soil (dry weight basis)

Field ID	Lab ID	Matrix	mg/Kg (ppm)	Surrogate Recovery (%)
EX-2-180N-130E-3B	P2707	SOIL	**ND**	87
EX-2-125N-150E-2W	P2708	SOIL	**ND**	91
EX-2-190N-135E-2W	P2709	SOIL	**ND**	100
EX-2-180N-70E-3W	P2710	SOIL	**ND**	90
EX-2-140N-100E-4B	P2711	SOIL	**ND**	88
EX-2195N-45E-4W	P2712	SOIL	**ND**	88
EX-2-180N-40E-6B	P2713	SOIL	**ND**	93
BLANK	-	-	ND	-
Reporting Limit	-	-	20	-

Surrogate is p-Bromofluorobenzene
ND = Not Detected (below reporting limit or detection limit)

WyEast Wy'East Environmental Sciences, Inc.

NW-TPHDx Quality Control Report

Batch ID: Dx-051012-A1
Batch Date: 10/12/05

Blank Quality Control

	Sample ID	Result (mg/Kg)	Acceptable Result	Surrogate Recovery	Acceptable Surrogate Recovery
Reagent Blank	LRB	0	<10 mg/Kg	101%	50%-150%
Matrix Blank	SBlank1	0	<10 mg/Kg	74%	50%-150%

Spike Quality Control

	Sample ID	Theoretical Spike Result (mg/Kg)	Spiked Sample Result (mg/Kg)	Spike Recovery %	Acceptable Spike Recovery%
Matrix Spike	LCS1	158	171	108%	70%-130%

Continuing Calibration Quality Control

Analyte	Sample ID	Continuing C.f.	5 point C.f.	Percent Difference	Acceptable Range
Diesel	CCVD	37.2	40.5	-8%	± 15%
Heavy Oil	CCVO	15.0	15.3	-2%	± 15%

Wy'East Environmental Sciences, Inc.

LABORATORY REPORT
Revised to Reflect QC REPORT NUMBER

Golder Associates
Attn: Steven Van Shaar
1200 W. Ironwood Dr., #102
Coeur d'Alene, ID 83814

PROJECT NAME/SITE:	Moses Lake MF	**REPORT NUMBER:**	58116
PROJECT NUMBER:	033-1335-002	**REPORT DATE:**	10-20-05
EXTRACTION DATE:	10-20-05	**PAGE:**	1 of 2
QC REPORT NUMBER	Dx-051019-A1		

NWTPH-Gx/5035A
Analyte: Total Petroleum Hydrocarbon Quantification for soil (dry weight basis)

Field ID	Lab ID	Matrix	mg/Kg (ppm)	Surrogate Recovery (%)
EX-2-80N-5E-7B	P3071	SOIL	**ND**	83
EX-2-80N-45W-7B	P3072	SOIL	**ND**	66
EX-2-120N-40W-5B	P3073	SOIL	**ND**	83
EX-2-190N-60E-4W	P3074	SOIL	**ND**	77
EX-2-175N-90E-3W	P3075	SOIL	**ND**	78
BLANK	-	-	ND	-
Reporting Limit	-	-	20	-

Surrogate is p-Bromofluorobenzene
ND = Not Detected (below reporting limit or detection limit)

EPA 8021B/5035A
Analyte: BTEX for soil (Benzene, Toluene, Ethylbenzene, Xylenes)

Field ID	Lab ID	Identification & Quantification mg/Kg (ppm)				Surrogate
		Benzene	Toluene	Ethyl-Benzene	Xylenes	Recovery (%)
EX-2-80N-5E-7B	P3071	**ND**	**ND**	**ND**	**ND**	83
EX-2-80N-45W-7B	P3072	**ND**	**ND**	**ND**	**ND**	66
EX-2-120N-40W-5B	P3073	**ND**	**ND**	**ND**	**ND**	83
EX-2-190N-60E-4W	P3074	**ND**	**ND**	**ND**	**0.18**	77
EX-2-175N-90E-3W	P3075	**ND**	**ND**	**ND**	**ND**	78
BLANK	-	ND	ND	ND	ND	-
Quantification Limits	-	0.04	0.04	0.04	0.04	-

Surrogate is p-Bromofluorobenzene
ND = Not Detected (below reporting limit or detection limit)

Wy'East Environmental Sciences, Inc.

NW-TPHDx Quality Control Report

Batch ID: Dx-051019-A1
Batch Date: 10/19/05

Blank Quality Control

	Sample ID	Result (mg/Kg)	Acceptable Result	Surrogate Recovery	Acceptable Surrogate Recovery
Reagent Blank	LRB	0	<10 mg/Kg	72%	50%-150%
Matrix Blank	SBlank1	0	<10 mg/Kg	79%	50%-150%

Spike Quality Control

	Sample ID	Theoretical Spike Result (mg/Kg)	Spiked Sample Result (mg/Kg)	Spike Recovery %	Acceptable Spike Recovery%
Matrix Spike	LCS1	159	176	111%	70%-130%

Continuing Calibration Quality Control

Analyte	Sample ID	Continuing C.f.	5 point C.f.	Percent Difference	Acceptable Range
Diesel	CCVD	38.4	40.5	-5%	± 15%
Heavy Oil	CCVO	14.4	15.3	-6%	± 15%

2415 SE 11th Ave., Portland, Oregon 97214 Phone (503) 231-9320 FAX (503) 231-9344

TO JESSIE COMPEAU

FROM MARK MURPHY

WY'EAST ENVIRONMENTAL SCIENCES INC.
2415 SE 11th AVE
PORTLAND OR 97214
(503) 231 9320

PAGES = 6

GX QC For Golder Samples

Report **57851, 57852**
10/3/2005
Batch: Gx-051003

	Result (mg/Kg)	Recovery	Acceptable Limits
CCV	106.89	105%	70%-130%
Blank	1.12		<20

Report **57892**
10/6/2005
Batch: Gx-051006

	Result (mg/Kg)	Recovery	Acceptable Limits
CCV	123.41	121%	70%-130%
Blank	2.44		<20
SpikeBlank	50.39	202%	70%-130%

**Spike out of control due to instrument carryover: hot sample in previous run.

Report **57931, excluding P2539**
10/7/2005
Batch: Gx-051007

	Result (mg/Kg)	Recovery	Acceptable Limits
CCV	99.52	98%	70%-130%
Blank	2.55		<20
SpikeBlank	25.87	103%	70%-130%

Report **57950, P2539**
10/10/2005
Batch: Gx-051010 ?

	Result (mg/Kg)	Recovery	Acceptable Limits
CCV	99.78	98%	70%-130%
Blank	1.22		<20
SpikeBlank	26.05	104%	70%-130%

Report **57988**
10/12/2005
Batch: Gx-051012

	Result (mg/Kg)	Recovery	Acceptable Limits
CCV	105.99	104%	70%-130%
Blank	1.33		<20
SpikeBlank	27.62	110%	70%-130%

Report 10/20/2005	**58116**		
Batch:	Gx-051020		
	Result (mg/Kg)	Recovery	Acceptable Limits
CCV	102.85	101%	70%-130%
Blank	1.93		<20
SpikeBlank	29.17	117%	70%-130%
Report 10/26/2005	**58196**		
Batch:	Gx-051026		
	Result (mg/Kg)	Recovery	Acceptable Limits
CCV	102.21	101%	70%-130%
Blank	5.62		<20
Sample Spike (P3385)	90.00	83%	70%-130%
Report 11/13/2005	**58420**		
Batch:	Gx-051113		
	Result (mg/Kg)	Recovery	Acceptable Limits
CCV	104.31	103%	70%-130%
Blank	3.51		<20
Report 11/17/2005	**58499**		
Batch:	Gx-051117		
	Result (mg/Kg)	Recovery	Acceptable Limits
CCV	100.50	99%	70%-130%
Blank	1.25		<20
SpikeBlank	25.62	102%	70%-130%
Report 11/21/2005	**58526**		
Batch:	Gx-051121		
	Result (mg/Kg)	Recovery	Acceptable Limits
CCV	93.02	91%	70%-130%
Blank	1.17		<20
Sample Spike (P4482)	130.00	147%	70%-130%

**Please note: CCV data reported are from batch Gx-051121x. The CCV associated with 11/21/05 was bad due to an instrument glitch. CCV was run within 24 hours of the Golder samples in question.

Report 11/23/2005	**58570**		
Batch:	Gx-051123		
	Result (mg/Kg)	Recovery	Acceptable Limits
CCV	98.79	97%	70%-130%
Blank	3.39		<20
Sample Spike (P4615)	121.00	131%	70%-130%
Report 11/28/2005	**58593**		
Batch:	Gx-051128		
	Result (mg/Kg)	Recovery	Acceptable Limits
CCV	106.45	105%	70%-130%
Blank	1.38		<20
Report 11/30/2005	**58640**		
Batch:	Gx-051130		
	Result (mg/Kg)	Recovery	Acceptable Limits
CCV	98.17	97%	70%-130%
Blank	4.21		<20
Sample Spike (P4851)	81.00	132%	70%-130%
Report 12/4/2005	**58668**		
Batch:	Gx-051204		
	Result (mg/Kg)	Recovery	Acceptable Limits
CCV	98.84	97%	70%-130%
Blank	2.18		<20
Report	**58701**		
Batch:			
	Result (mg/Kg)	Recovery	Acceptable Limits
CCV			70%-130%
Blank			<20
Sample Spike P5014	84.00	122%	70%-130%

Report 58775
12/13/2005
Batch: Gx-051213

	Result (mg/Kg)	Recovery	Acceptable Limits
CCV	105.95	104%	70%-130%
Blank	1.39		<20
SpikeBlank	25.58	99%	70%-130%

Report **58845**
12/20/2005
Batch: Gx-051220

	Result (mg/Kg)	Recovery	Acceptable Limits
CCV	93.81	92%	70%-130%
Blank	1.10		<20
Sample Spike P5537	48.00	161%	70%-130%

Report **57784**
9/28/2005
Batch: Gx-050928

	Result (mg/Kg)	Recovery	Acceptable Limits
CCV	565.54	113%	70%-130%
Blank	25.77		<250
SpikeBlank	1340.08	134%	70%-130%

Report **57803**
9/29/2005
Batch: Gx-050929

	Result (mg/Kg)	Recovery	Acceptable Limits
CCV	537.93	108%	70%-130%
Blank	17.95		<250
SpikeBlank	1240.89	124%	70%-130%

Dry Weight Percents

58845	P5535	65%
↓	P5536	65%
↓	P5537	65%

Wy'East calculates "dry weight percent" for DX and GX samples containing contamination. Moisture percent = 100%-DW%. For clean samples, dry weight correction of results is not applicable. Therefore, for some clean samples, DW% was not calculated. (Denoted by N/A)

Report #	Lab ID#	DW%
57784	P1821	N/A
↓	P1822	N/A
↓	P1823	N/A
↓	P1824	N/A
57803	P1896	86%
↓	P1897	84%
↓	P1898	81%
↓	P1899	81%
↓	P1900	82%
↓	P1901	84%
↓	P1902	82%
↓	P1903	78%
57851	P2186	83%
↓	P2187	83%
↓	P2188	92%
↓	P2189	84%
↓	P2190	81%
↓	P2191	81%
↓	P2192	82%
↓	P2193	77%
57852	P2194	83%
↓	P2195	81%
↓	P2196	84%
↓	P2197	80%
↓	P2198	77%
↓	P2199	82%
↓	P2200	83%
↓	P2201	80%
↓	P2202	81%
↓	P2203	80%
↓	P2204	80%
↓	P2205	78%
57892	P2332	86%
↓	P2333	85%
↓	P2334	86%
↓	P2335	96%
↓	P2336	79%
↓	P2337	76%
↓	P2338	57%
↓	P2339	81%
57931	P2535	71%
↓	P2536	75%
↓	P2537	71%
↓	P2538	76%
↓	P2539	80%
↓	P2540	86%
↓	P2541	92%
57950	P2592	81%
↓	P2593	83%
↓	P2594	76%
↓	P2595	81%
↓	P2596	78%

Report #	Lab ID#	DW%
57988	P2707	72%
↓	P2708	82%
↓	P2709	82%
↓	P2710	85%
↓	P2711	76%
↓	P2712	78%
↓	P2713	70%
58116	P3071	N/A
↓	P3072	N/A
↓	P3073	N/A
↓	P3074	N/A
↓	P3075	N/A
58196	P3376	81%
↓	P3377	85%
↓	P3378	58%
↓	P3379	47%
↓	P3380	71%
↓	P3381	86%
↓	P3382	72%
↓	P3383	72%
↓	P3384	88%
↓	P3385	72%
58420	P4114	84%
58499	P4393	90%
↓	P4394	85%
58526	P4480	81%
↓	P4481	79%
↓	P4482	89%
↓	P4483	70%
↓	P4484	70%
58570	P4614	83%
↓	P4615	80%
↓	P4616	87%
↓	P4617	81%
58593	P4715	N/A
↓	P4716	N/A
↓	P4717	N/A
↓	P4718	N/A
58668	P4929	86%
↓	P4930	80%
↓	P4931	83%
↓	P4932	80%
↓	P4933	59%
58640	P4851	80%
↓	P4852	76%
58701	P5014	80%
↓	P5015	86%
↓	P5016	78%
↓	P5017	89%
58775	P5263	91%
↓	P5264	88%

Dry Weight Percents

58845	P5535	65%
↓	P5536	65%
↓	P5537	65%

From: "Informa" <Informa_LLC@comcast.net>
To: <lab@wyeastlab.net>
Cc: "Norton, Ted" <TNorton@golder.com>
Sent: Thursday, February 16, 2006 3:08 PM
Subject: Fw: Moses MF Project

Post-it® Fax Note 7671	Date 2/16/05	# of pages ▶ 3
To Wy'East	From Informa, LLC	
Co./Dept ~Mark	Co. J. Compeau	
Phone # (503)231-9320	Phone # (206)527-2479	
Fax # (503)231-9344	Fax # (206)527-2479	

page 1 of 3

----- Original Message -----
From: Informa
To: Informa
Sent: Thursday, February 16, 2006 3:05 PM
Subject: Re: Moses MF Project

To Mark,
Will fax this in a few minutes. As discussed - a follow up -
2. Need one sample surrogate method blank recovery for Dx, and Gx/BETX. Hope this clarifies what Wy'East Laboratory is doing to calculate surrogate recoveries.
3. MS/MSD were requested by Golder on the following samples:

- 58196 - P3383 and P3385 83
- 58526 - P4482 147
- 58570 - P4615 131
- 58640 - P4851 132
- 58668 - P4930 ~~122~~ 141
- 58701 - P5015 P5014 161 122
- 58845 - P5537 161

I would like to confirm the status of these MS/MSD requests. As I understand it they were analyzed with the gas and not reported? This information would be very useful in providing QA/QC

4. These are the ones where I can't tell if field dups were provided - an e-mail request is in to Golder but I have not heard back from them yet. They are working on it. In the meantime do you have diesel dup data associated with the below mentioned analytical batches (does not need to be specifically associated with client data but needs to have been run within the same analytical batch)? If no I will just acknowledge in the report. Spike not necessary although could be useful. If this can't be provided in a timely fashion please let me know. Will note this as is in the QA/QC report.

- 57784
- 57803
- 57851
- 57852
- 57892
- 57931
- 57950
- 57988
- 58116

5. Whatever QA/QC you can provide, in a timely fashion for NWTPH-Gx and to a lesser extent the BETX results (some measure of accuracy and/or the MS/MSD results). Client placed high emphasis on Dx and then Gx. BETX was provided.

7. Detection limit for NWTPH-Gx is 250 ug/Kg on reports 57803 (P1896 - P1903), 57784 (P1821, P1822, P1823, P1824). Please confirm.

I note that the BETX reporting limits seem to fluctuate i.e. from 0 04 (57851) 1ug/Kg (57803) to 2 ug/Kg (57784).

Many thanks. I recognize that you may be limited in your response due to the # of questions and the fact that I need to turn this around quickly. Please do whatever seems reasonable and practicable. Thanks for your assistance today.

Jessie Compeau
Informa, LLC
(206) 527-2479

----- Original Message -----
From: Informa
To: lab@wyeastlab.net
Cc: Norton, Ted
Sent: Thursday, February 16, 2006 11:57 AM
Subject: Moses MF Project

I talked with Rebecca this morning to give her a heads up that the data were being reviewed and that I had a few questions on the following Wy'East REPORTS:

- 57784
- 57803
- 57851
- 57852
- 57892
- 57931
- 57950
- 57988
- 58116
- 58196
- 58420
- 58499
- 58526
- 58570
- 58593
- 58668
- 58640
- 58701
- 58775

A few issues as follows:

1. What are the percent moisture results for these samples? Raw data is ok.
2. Why isn't the surrogate percent recovery reported with each of the MB's as per method requirements?
3. MS/MSD analysis was requested along with laboratory numbers 58668, 58640, 58701, 58570, 58526, and 58196. MS/MSD results were not reported with the data. Are these available for review?
4. Dilution factors are not shown - does this mean that all sample RFs were within your linear curve?
5. No measure of accuracy/precision was provided for NWTPH-G and for that matter with the BETX. Are MS/MSD or LCS/LCSD data available? Client indicates that BETX was not a priority. This leaves us with NWTPH-Gx.
6. Some measure of precision should be provided for the NWTPH-Dx analysis - as per NWTPH-Dx method 10% (page 5). Is this data available?

7. Detection limit for NWTPH-Gx is 250 ug/Kg on reports 57803, 57784, and 57803. Is the NWTPH-Gx reporting limit a typo? Please confirm.
8. What is your heavy oil standard? Lube oil?
9. Was there any cleanup performed on samples submitted for NWTPH-Dx analyses?

I realize that these samples were analyzed by Wy'East and that most if not all with a quick TAT requirement. Perhaps you could give me a call regarding these issues? I do need to turn this report around ASAP so it would be good to hear from you sometime today.

Thanks and regards

Jessie Compeau
Informa, LLC
(206) 527-2479

61 31 5.3 53 53 53

Primary sample ID	Lab	Report	Sample Date	Oil (ppm)	Diesel (ppm)	Gas (ppm)	B (ppb)	T (ppb)	E (ppb)	X (ppb)
EX-1-0922-B2	On-Site	0509-184	9/22/05	~~< 67~~	~~< 33~~	~~< 5.6~~	< 20	~~< 56~~	~~< 56~~	~~< 56~~
EX-1-0922-C7	On-Site	0509-184	9/22/05	~~< 67~~	< 33	~~< 5.6~~	< 20	< 56	< 56	< 56
EX-2-150N-45W-4W	Wy East	58196	10/24/05	7250	< 25	< 20	< 40	< 40	< 40	< 40
EX-2-35N-10W-5W	Wy East	58196	10/24/05	10000	< 25	< 20	< 40	< 40	< 40	< 40
EX-2-220N-0E-6B	Wy East	58526	11/18/05	< 100	< 25	< 20	< 40	< 40	< 40	< 40
EX-2-10N-115E-4W	Wy East	58570	11/21/05	760	< 25	< 20	< 40	< 40	< 40	< 40
EX-2-230N-10W-5B	Wy East	58593	11/23/05	< 100	< 25	< 20	< 40	< 40	< 40	< 40
EX-2-20N-20W-5W	Wy East	58668	12/2/05	< 100	< 25	< 20	< 40	40	< 40	170
EX-2-20N-10E-5W	Wy East	58701	12/6/05	< 100	< 25	< 20	< 40	< 40	< 40	< 40
EX-2-295N-30W-3W	Wy East	58845	12/19/05	< 100	< 25	< 20	< 40	< 40	< 40	< 40

66 5.5 20 55 55 55

fix this

	Duplicate or split sample ID	Lab	Report	Sample Date	Oil (ppm)	Diesel (ppm)	Gas (ppm)	B (ppb)	T (ppb)	E (ppb)	X (ppb)
	EX-1-B(2)	Wy East	57784	9/26/05	< 100	< 25	< 0.25	< 2	< 2	< 2	< 2
	EX-1-C(7)	Wy East	57784	9/26/05	< 100	< 25	< 0.25	< 2	< 2	< 2	< 2
1	EX-2-150N-45W-4WD	Wy East	58196	10/24/05	6830	< 25	37	< 40	< 40	260	370
2	EX-2-35N-10W-5WD	Wy East	58196	10/24/05	3040	38	< 20	< 40	< 40	< 40	< 40
3	EX-2-220N-0E-6BD	Wy East	58526	11/18/05	< 100	< 25	< 20	< 40	< 40	< 40	< 40
4	EX-2-10N-115E-4WD	Wy East	58570	11/21/05	210	< 25	< 20	< 40	< 40	< 40	< 40
5	EX-2-230N-10W-5BD	Wy East	58593	11/23/05	< 100	< 25	< 20	< 40	< 40	< 40	< 40
6	EX-2-20N-20W-5WD	Wy East	58668	12/2/05	< 100	< 25	< 20	< 40	< 40	< 40	40
7	EX-2-20N-10E-5WD	Wy East	58701	12/6/05	< 100	< 25	< 20	< 40	< 40	< 40	< 40
8	EX-2-295N-30W-3WD	Wy East	58845	12/19/05	129	< 25	< 20	< 40	190	40	200

Jessie and Geoff Compeau

From: "Jessie and Geoff Compeau" <gjcompeau@comcast net>
To: "Norton, Ted" <TNorton@golder.com>
Sent: Friday, February 17, 2006 10:00 AM
Subject: Status of Wy'East

Ted,

At this point - I have too many questions about this lab and think the best approach is that most data should be J/UJ qualified - at least. In some instances the field duplicates collected towards the end of the project will help redeem some of this diesel data. When I contacted the lab yesterday, they were courteous and helpful which is always a good start especially when there are so many questions and issues. QA deficiencies will be noted and summarized in the data validation report.

I should ask - Is there a work plan for this?

Please contact me if you have questions about the above.

Jessie Compeau
Informa, LLC

74-82

100 - 18 / 82

c-1.-c.2 Rec'd. 10/7/05 PVM

Report nbe 15.5

WyEast
Environmental Sciences, Inc.

Research & Laboratory Services

CHAIN OF CUSTODY

2415 SE 11th Ave. • Portland, Oregon 97214 • (503) 231-9320 • FAX (503) 231-9344

PROJECT # 003-1335-002	PROJECT NAME / SITE Moses Lake WA	STATE WA	PURCHASE ORDER #
COMPANY Golder	REPORT ATTENTION Doug Morell / Ted Norton	PHONE NUMBER	FAX NUMBER
SAMPLES COLLECTED BY [signature]	DATE(S) COLLECTED 9/30/05	TIME(S) COLLECTED	SAMPLES CHILLED TO 4° C?
PRESERVATIVE USED? (HCl, etc.)			Regular ☐ 3-5 Days ☐

FIELD ID	MEDIA	CONTAINER	VOLUME ETC	ANALYSIS REQUIRED	LAB ID
EX-1-SWMB-1(4)	SOIL	2	9/30/05, 14:00	NWTPH-G/BTEX, NWTPH-D	P2194
EX-1-SWMB-5(4)			,14:10		P2195
EX-1-SWMB-10(4)			,14:20		P2196
EX-1-SWMB-15(5)			,14:30		P2197
EX-1-SWMB-20(5)			,14:40		P2198
EX-1-SWMB-25(5)			,14:50		P2199
EX-1-SWMB-30(6)			,15:00		P2200
EX-1-SWMB-35(6)			,15:10		P2201
EX-2-25N-50E-4			,15:30		P2202
EX-2-25N-100E-4			,15:40		P2203
EX-2-50N-125E-4			,15:50		P2204
EX-2-60N-125E-4			,16:00		P2205

RELINQUISHED BY [signature]	DATE / TIME 9/30/05 16:00	RECEIVED BY	DATE / TIME
RELINQUISHED BY	DATE / TIME	RECEIVED BY LAB [signature] 10/3/05	DATE / TIME 9:35 AM

Submission of samples with testing requirements to WyEast Environmental Sciences will be understood to be an agreement for services in accordance with the conditions listed on the back of the client copy

2/2

LABORATORY REPORT

Golder Associates
Attn: Paul Van Middlesworth
1200 W. Ironwood Dr., #102
Coeur d'Alene, ID 83814

PROJECT NAME/SITE:	Moses Lake MF	**REPORT NUMBER:**	57852
PROJECT NUMBER:	003-1335-002	**REPORT DATE:**	10-4-05
EXTRACTION DATE:	10-3-05	**PAGE:**	1 of 3

QC REPORT NUMBER: Dx-051003-A1

NWTPH-Dx
Analyte: Total Petroleum Hydrocarbon Quantification for soil (dry weight basis)

Field ID	Lab ID	Diesel mg/Kg (ppm)	Heavy Oil mg/Kg (ppm)	Surrogate Recovery (%)
EX-1-SWMB-1 (4)	P2194	**3,670**	**ND**	72
EX-1-SWMB-5 (4)	P2195	**ND**	**ND**	93
EX-1-SWMB-10 (4)	P2196	**ND**	**ND**	93
EX-1-SWMB-15 (5)	P2197	**55**	**ND**	95
EX-1-SWMB-20 (5)	P2198	**63**	**ND**	99
EX-1-SWMB-25 (5)	P2199	**ND**	**ND**	92
EX-1-SWMB-30 (6)	P2200	**139**	**ND**	99
EX-1-SWMB-35 (6)	P2201	**714**	**ND**	105
EX-2-25N-50E-4	P2202	**ND**	**311**	99
EX-2-25N-100E-4	P2203	**ND**	**1,990**	91
EX-2-50N-125E-4	P2204	**ND**	**ND**	84
EX-2-60N-125E-4	P2205	**ND**	**ND**	92
BLANK	-	ND	ND	-
Reporting Limit	-	25	100	-

Surrogate is 2-fluorobiphenyl
ND = Not Detected (below reporting limit or detection limit)

LABORATORY REPORT

Golder Associates
Attn: Paul Van Middlesworth
1200 W. Ironwood Dr., #102
Coeur d'Alene, ID 83814

PROJECT NAME/SITE:	Moses Lake MF	**REPORT NUMBER:**	57852
PROJECT NUMBER:	003-1335-002	**REPORT DATE:**	10-4-05
EXTRACTION DATE:	10-3-05	**PAGE:**	2 of 3

NWTPH-Gx/5035A
Analyte: Total Petroleum Hydrocarbon Quantification for soil (dry weight basis)

Field ID	Lab ID	Matrix	mg/Kg (ppm)	Surrogate Recovery (%)
EX-1-SWMB-1 (4)	P2194	SOIL	**319 ‡**	98
EX-1-SWMB-5 (4)	P2195	SOIL	**ND**	108
EX-1-SWMB-10 (4)	P2196	SOIL	**ND**	114
EX-1-SWMB-15 (5)	P2197	SOIL	**ND**	102
EX-1-SWMB-20 (5)	P2198	SOIL	**ND**	108
EX-1-SWMB-25 (5)	P2199	SOIL	**90**	107
EX-1-SWMB-30 (6)	P2200	SOIL	**ND**	102
EX-1-SWMB-35 (6)	P2201	SOIL	**67 ‡**	99
EX-2-25N-50E-4	P2202	SOIL	**ND**	113
EX-2-25N-100E-4	P2203	SOIL	**395**	97
EX-2-50N-125E-4	P2204	SOIL	**ND**	99
EX-2-60N-125E-4	P2205	SOIL	**ND**	100
BLANK	-	-	ND	-
Reporting Limit	-	-	20	-

Surrogate is p-Bromofluorobenzene
ND = Not Detected (below reporting limit or detection limit)

‡ Not gasoline. Gas range portion of diesel

LABORATORY REPORT

Golder Associates
Attn: Paul Van Middlesworth
1200 W. Ironwood Dr., #102
Coeur d'Alene, ID 83814

PROJECT NAME/SITE:	Moses Lake MF	**REPORT NUMBER:**	57852
PROJECT NUMBER:	003-1335-002	**REPORT DATE:**	10-4-05
EXTRACTION DATE:	10-3-05	**PAGE:**	3 of 3

EPA 8021B/5035A
Analyte: BTEX for soil (Benzene, Toluene, Ethylbenzene, Xylenes)

Field ID	Lab ID	Identification & Quantification mg/Kg (ppm)				Surrogate Recovery (%)
		Benzene	Toluene	Ethyl-Benzene	Xylenes	
EX-1-SWMB-1 (4)	P2194	**ND**	**ND**	**ND**	**0.36**	98
EX-1-SWMB-5 (4)	P2195	**ND**	**ND**	**ND**	**ND**	108
EX-1-SWMB-10 (4)	P2196	**ND**	**ND**	**ND**	**ND**	114
EX-1-SWMB-15 (5)	P2197	**ND**	**ND**	**ND**	**0.08**	102
EX-1-SWMB-20 (5)	P2198	**ND**	**ND**	**ND**	**ND**	108
EX-1-SWMB-25 (5)	P2199	**ND**	**ND**	**ND**	**0.36**	107
EX-1-SWMB-30 (6)	P2200	**ND**	**ND**	**ND**	**ND**	102
EX-1-SWMB-35 (6)	P2201	**ND**	**ND**	**0.27**	**0.09**	99
EX-2-25N-50E-4	P2202	**ND**	**ND**	**ND**	**ND**	113
EX-2-25N-100E-4	P2203	**ND**	**ND**	**ND**	**2.66**	97
EX-2-50N-125E-4	P2204	**ND**	**ND**	**ND**	**ND**	99
EX-2-60N-125E-4	P2205	**ND**	**ND**	**ND**	**ND**	100
BLANK	-	ND	ND	ND	ND	-
Quantification Limits	-	0.04	0.04	0.04	0.04	-

Surrogate is p-Bromofluorobenzene
ND = Not Detected (below reporting limit or detection limit)

Wy'East Environmental Sciences, Inc.

LABORATORY REPORT

Golder Associates
Attn: Ted Norton
1200 W. Ironwood Dr
Coeur d'Alene, ID 83814

PROJECT NAME/SITE: Moses Lake M F
PROJECT NUMBER: 003-1335-002
EXTRACTION DATE: 9-27-05
REPORT NUMBER: 57784
REPORT DATE: 9-29-05
PAGE: 1 of 2

NWIPH-Dx

Analyte: Total Petroleum Hydrocarbon Quantification for soil (dry weight basis)

Field ID	Lab ID	Diesel mg/Kg (ppm)	Heavy Oil mg/Kg (ppm)	Surrogate Recovery (%)
EX-1-B (2)	P1821	**ND**	**ND**	78
EX-1-C (7)	P1822	**ND**	**ND**	74
EX-1-D (8)	P1823	**ND**	**ND**	86
EX-1-E (8)	P1824	**ND**	**ND**	78
BLANK	-	ND	ND	-
Reporting Limit	-	25	100	-

Surrogate is 2-fluorobiphenyl
ND = Not Detected (below reporting limit or detection limit)

NWIPH-Gx/5035A

Analyte: Total Petroleum Hydrocarbon Quantification for soil (dry weight basis)

Field ID	Lab ID	Matrix	µg/Kg (ppb)	Surrogate Recovery (%)
EX-1-B (2)	P1821	SOIL	**ND**	62
EX-1-C (7)	P1822	SOIL	**ND**	63
EX-1-D (8)	P1823	SOIL	**ND**	63
EX-1-E (8)	P1824	SOIL	**ND**	65
BLANK	-	-	ND	-
Reporting Limit	-	-	250	-

Surrogate is p-Bromofluorobenzene
ND = Not Detected (below reporting limit or detection limit)

2/20/06

Wy'East Environmental Sciences, Inc.

LABORATORY REPORT

Golder Associates
Attn: Ted Norton
1200 W. Ironwood Dr.
Coeur d'Alene, ID 83814

PROJECT NAME/SITE:	Moses Lake M F	**REPORT NUMBER:**	57784
PROJECT NUMBER:	003-1335-002	**REPORT DATE:**	9-29-05
EXTRACTION DATE:	9-27-05	**PAGE:**	2 of 2

EPA 8021B/5035A
Analyte: BTEX for soil (Benzene, Toluene, Ethylbenzene, Xylenes)

Field ID	Lab ID	Identification & Quantification µg/Kg (ppb)				Surrogate Recovery (%)
		Benzene	Toluene	Ethyl-Benzene	Xylenes	
EX-1-B (2)	P1821	ND UJ	ND UJ	ND UJ	ND UJ	62
EX-1-C (7)	P1822	ND	ND	ND	ND	63
EX-1-D (8)	P1823	ND	ND	ND	ND	63
EX-1-E (8)	P1824	ND	ND	ND	ND	65
BLANK	-	ND	ND	ND	ND	-
Quantitation Limits	-	2	2	2	2	-

Surrogate is p-Bromofluorobenzene
ND = Not Detected (below reporting limit or detection limit)

2/20/06

LABORATORY REPORT

Golder Associates
Attn: Ted Norton
1200 W. Ironwood Dr., #102
Coeur d'Alene, ID 83814

PROJECT NAME/SITE:	Moses Lake Maint. Facility	**REPORT NUMBER:**	57803
PROJECT NUMBER:	003-1335-002	**REPORT DATE:**	9-30-05
EXTRACTION DATE:	9-29-05	**PAGE:**	1 of 2

QC REPORT NUMBER: Dx-050929-C2
Dx-050929-A1

NWTPH-Dx

Analyte: Total Petroleum Hydrocarbon Quantification for soil (dry weight basis)

Field ID	Lab ID	Diesel mg/Kg (ppm)	Heavy Oil mg/Kg (ppm)	Surrogate Recovery (%)
EX-2-0928-C (4)	P1896	**ND**	**731** J	101
EX-2-0928-F (4)	P1897	**ND**	**7,000** J	101
EX-2-0928-H (5)	P1898	**ND**	**ND**	79
EX-2-0928-J (6)	P1899	**ND**	**5,340** J	97
EX-1-SWMB-40 (8)	P1900	72 J	**ND**	93
EX-1-SWMB-60 (4)	P1901	**111**	**ND**	87
EX-1-0928-G (7)	P1902	**ND**	**ND**	67
EX-1-0928-F (8)	P1903	**ND**	**ND**	64
BLANK	-	ND	ND	-
Reporting Limit	-	25	100	-

Surrogate is 2-fluorobiphenyl
ND = Not Detected (below reporting limit or detection limit)

Not presented

NWTPH-Gx/5035A

Analyte: Total Petroleum Hydrocarbon Quantification for soil (dry weight basis)

Field ID	Lab ID	Matrix	µg/Kg (ppb)	Surrogate Recovery (%)
EX-2-0928-C (4)	P1896	SOIL	**ND**	100
EX-2-0928-F (4)	P1897	SOIL	**ND**	114
EX-2-0928-H (5)	P1898	SOIL	**ND**	102
EX-2-0928-J (6)	P1899	SOIL	**ND**	103
EX-1-SWMB-40 (8)	P1900	SOIL	**583** J	118
EX-1-SWMB-60 (4)	P1901	SOIL	**ND**	116
EX-1-0928-G (7)	P1902	SOIL	**ND**	101
EX-1-0928-F (8)	P1903	SOIL	**ND**	108
BLANK	-	-	ND	-
Reporting Limit	-	-	250	-

Surrogate is p-Bromofluorobenzene
ND = Not Detected (below reporting limit or detection limit)

? 20 mg/kg

2/20/06

LABORATORY REPORT

Golder Associates
Attn: Ted Norton
1200 W. Ironwood Dr., #102
Coeur d'Alene, ID 83814

PROJECT NAME/SITE:	Moses Lake Maint. Facility	**REPORT NUMBER:**	57803
PROJECT NUMBER:	003-1335-002	**REPORT DATE:**	9-30-05
EXTRACTION DATE:	9-29-05	**PAGE:**	2 of 2

EPA 8021B/5035A
Analyte: BTEX for soil (Benzene, Toluene, Ethylbenzene, Xylenes)

Field ID	Lab ID	Identification & Quantification µg/Kg (ppb)				Surrogate Recovery (%)
		Benzene	Toluene	Ethyl-Benzene	Xylenes	
EX-2-0928-C (4)	P1896	**ND**	**ND**	**ND**	**ND**	100
EX-2-0928-F (4)	P1897	**ND**	**ND**	**ND**	**ND**	114
EX-2-0928-H (5)	P1898	**ND**	**ND**	**ND**	**ND**	102
EX-2-0928-J (6)	P1899	**ND**	**ND**	**ND**	**1 J**	103
EX-1-SWMB-40 (8)	P1900	**ND**	**ND**	**1 J**	**1 J**	118
EX-1-SWMB-60 (4)	P1901	**ND**	**ND**	**ND**	**ND**	116
EX-1-0928-G (7)	P1902	**ND**	**ND**	**ND**	**ND**	101
EX-1-0928-F (8)	P1903	**ND**	**ND**	**ND**	**ND**	108
BLANK	-	ND	ND	ND	ND	-
Quantification Limits	-	1	1	1	1	-

Surrogate is p-Bromofluorobenzene
ND = Not Detected (below reporting limit or detection limit)

1/20/06

LABORATORY REPORT

Golder Associates
Attn: Paul Van Middlesworth
1200 W. Ironwood Dr., #102
Coeur d'Alene, ID 83814

PROJECT NAME/SITE:	Moses Lake MF	**REPORT NUMBER:**	57851
PROJECT NUMBER:	003-1335-002	**REPORT DATE:**	10-4-05
EXTRACTION DATE:	10-3-05	**PAGE:**	1 of 2

QC REPORT NUMBER: Dx-051003-A1
Dx-051003-C1

NWTPH-Dx
Analyte: Total Petroleum Hydrocarbon Quantification for soil (dry weight basis)

Field ID	Lab ID	Diesel mg/Kg (ppm)	Heavy Oil mg/Kg (ppm)	Surrogate Recovery (%)
EX-1-SWMB-40 (8)	P2186	**ND**	**ND**	103
EX-1-SWMB-45 (8)	P2187	**ND**	**ND**	105
EX-1-SWMB-50 (8)	P2188	**ND**	**ND**	103
EX-1-SWMB-55 (5)	P2189	**28** J✓	**ND**	93
EX-1-SWMB-60 (4)	P2190	**58** J✓	**ND**	86
EX-1-SWMB-65 (4)	P2191	**ND**	**ND**	82
EX-1-SWMB-70 (4)	P2192	**ND**	**ND**	86
EX-2-0929-K (6)	P2193	**ND**	**132** J✓ LS	107
BLANK	-	ND	ND	-
Reporting Limit	-	25	100	-

Surrogate is 2-fluorobiphenyl
ND = Not Detected (below reporting limit or detection limit)

2/20/06

LABORATORY REPORT

Golder Associates
Attn: Paul Van Middlesworth
1200 W. Ironwood Dr., #102
Coeur d'Alene, ID 83814

PROJECT NAME/SITE:	Moses Lake MF	**REPORT NUMBER:**	57851
PROJECT NUMBER:	003-1335-002	**REPORT DATE:**	10-4-05
EXTRACTION DATE:	10-3-05	**PAGE:**	2 of 2

NWTPH-Gx/5035A
Analyte: Total Petroleum Hydrocarbon Quantification for soil (dry weight basis)

Field ID	Lab ID	Matrix	mg/Kg (ppm)	Surrogate Recovery (%)
EX-1-SWMB-40 (8)	P2186	SOIL	**ND** UJ	100
EX-1-SWMB-45 (8)	P2187	SOIL	**ND**	101
EX-1-SWMB-50 (8)	P2188	SOIL	**ND**	99
EX-1-SWMB-55 (5)	P2189	SOIL	**ND**	103
EX-1-SWMB-60 (4)	P2190	SOIL	**ND**	97
EX-1-SWMB-65 (4)	P2191	SOIL	**ND**	100
EX-1-SWMB-70 (4)	P2192	SOIL	**ND**	102
EX-2-0929-K (6)	P2193	SOIL	**ND**	97
BLANK	-	-	ND	-
Reporting Limit	-	-	20	-

LS

Surrogate is p-Bromofluorobenzene
ND = Not Detected (below reporting limit or detection limit)

EPA 8021B/5035A
Analyte: BTEX for soil (Benzene, Toluene, Ethylbenzene, Xylenes)

Field ID	Lab ID	Identification & Quantification mg/Kg (ppm)				Surrogate Recovery (%)
		Benzene	Toluene	Ethyl-Benzene	Xylenes	
EX-1-SWMB-40 (8)	P2186	**ND** UJ	**ND** UJ	**ND** UJ	**ND** UJ	100
EX-1-SWMB-45 (8)	P2187	**ND**	**ND**	**ND**	**ND**	101
EX-1-SWMB-50 (8)	P2188	**ND**	**ND**	**ND**	**ND**	99
EX-1-SWMB-55 (5)	P2189	**ND**	**ND**	**ND**	**ND**	103
EX-1-SWMB-60 (4)	P2190	**ND**	**0.05** J	**ND**	**0.07** J	97
EX-1-SWMB-65 (4)	P2191	**ND**	**ND** UJ	**ND**	**ND** UJ	100
EX-1-SWMB-70 (4)	P2192	**ND**	**ND**	**ND**	**0.04** J	102
EX-2-0929-K (6)	P2193	**ND**	**0.04** J	**ND**	**0.09** J	97
BLANK	-	ND	ND	ND	ND	-
Quantification Limits	-	0.04	0.04	0.04	0.04	-

Surrogate is p-Bromofluorobenzene
ND = Not Detected (below reporting limit or detection limit)

We Don't present, LS

Jm 2/20/06

LABORATORY REPORT

Golder Associates
Attn: Paul Van Middlesworth
1200 W. Ironwood Dr., #102
Coeur d'Alene, ID 83814

PROJECT NAME/SITE:	Moses Lake MF	**REPORT NUMBER:**	57852
PROJECT NUMBER:	003-1335-002	**REPORT DATE:**	10-4-05
EXTRACTION DATE:	10-3-05	**PAGE:**	1 of 3

QC REPORT NUMBER: Dx-051003-A1

NWTPH-Dx
Analyte: Total Petroleum Hydrocarbon Quantification for soil (dry weight basis)

Field ID	Lab ID	Diesel mg/Kg (ppm)	Heavy Oil mg/Kg (ppm)	Surrogate Recovery (%)
EX-1-SWMB-1 (4)	P2194	**3,670** J	**ND**	72
EX-1-SWMB-5 (4)	P2195	**ND**	**ND**	93
EX-1-SWMB-10 (4)	P2196	**ND**	**ND**	93
EX-1-SWMB-15 (5)	P2197	**55** J	**ND**	95
EX-1-SWMB-20 (5)	P2198	**63** J	**ND**	99
EX-1-SWMB-25 (5)	P2199	**ND**	**ND**	92
EX-1-SWMB-30 (6)	P2200	**139** J	**ND**	99
EX-1-SWMB-35 (6)	P2201	**714** J	**ND**	105
EX-2-25N-50E-4	P2202	**ND**	**311** J	99
EX-2-25N-100E-4	P2203	**ND**	**1,990** J	91
EX-2-50N-125E-4	P2204	**ND**	**ND**	84
EX-2-60N-125E-4	P2205	**ND**	**ND**	92
BLANK	-	ND	ND	-
Reporting Limit	-	25	100	-

Surrogate is 2-fluorobiphenyl
ND = Not Detected (below reporting limit or detection limit)

2/20/06.

LABORATORY REPORT

Golder Associates
Attn: Paul Van Middlesworth
1200 W. Ironwood Dr., #102
Coeur d'Alene, ID 83814

PROJECT NAME/SITE:	Moses Lake MF	**REPORT NUMBER:**	57852
PROJECT NUMBER:	003-1335-002	**REPORT DATE:**	10-4-05
EXTRACTION DATE:	10-3-05	**PAGE:**	2 of 3

NWTPH-Gx/5035A
Analyte: Total Petroleum Hydrocarbon Quantification for soil (dry weight basis)

Field ID	Lab ID	Matrix	mg/Kg (ppm)	Surrogate Recovery (%)
EX-1-SWMB-1 (4)	P2194	SOIL	**319 ‡** J	98
EX-1-SWMB-5 (4)	P2195	SOIL	**ND** UJ	108
EX-1-SWMB-10 (4)	P2196	SOIL	**ND**	114
EX-1-SWMB-15 (5)	P2197	SOIL	**ND**	102
EX-1-SWMB-20 (5)	P2198	SOIL	**ND**	108
EX-1-SWMB-25 (5)	P2199	SOIL	**90** J	107
EX-1-SWMB-30 (6)	P2200	SOIL	**ND** UJ	102
EX-1-SWMB-35 (6)	P2201	SOIL	**67 ‡** J	99
EX-2-25N-50E-4	P2202	SOIL	**ND** UJ	113
EX-2-25N-100E-4	P2203	SOIL	**395** J	97
EX-2-50N-125E-4	P2204	SOIL	**ND** UJ	99
EX-2-60N-125E-4	P2205	SOIL	**ND**	100
BLANK	-	-	ND	-
Reporting Limit	-	-	20	-

Surrogate is p-Bromofluorobenzene
ND = Not Detected (below reporting limit or detection limit)

‡ Not gasoline. Gas range portion of diesel.

2/20/06

LABORATORY REPORT

Golder Associates
Attn: Paul Van Middlesworth
1200 W. Ironwood Dr., #102
Coeur d'Alene, ID 83814

PROJECT NAME/SITE:	Moses Lake MF	**REPORT NUMBER:**	57852
PROJECT NUMBER:	003-1335-002	**REPORT DATE:**	10-4-05
EXTRACTION DATE:	10-3-05	**PAGE:**	3 of 3

EPA 8021B/5035A
Analyte: BTEX for soil (Benzene, Toluene, Ethylbenzene, Xylenes)

Field ID	Lab ID	Identification & Quantification mg/Kg (ppm)				Surrogate Recovery (%)
		Benzene	Toluene	Ethyl-Benzene	Xylenes	
EX-1-SWMB-1 (4)	P2194	**ND** UJ	**ND** UJ	**ND** UJ	**0.36** J	98
EX-1-SWMB-5 (4)	P2195	**ND**	**ND**	**ND**	**ND** UJ	108
EX-1-SWMB-10 (4)	P2196	**ND**	**ND**	**ND**	**ND**	114
EX-1-SWMB-15 (5)	P2197	**ND**	**ND**	**ND**	**0.08** J	102
EX-1-SWMB-20 (5)	P2198	**ND**	**ND**	**ND**	**ND** UJ	108
EX-1-SWMB-25 (5)	P2199	**ND**	**ND**	**ND**	**0.36** J	107
EX-1-SWMB-30 (6)	P2200	**ND**	**ND**	**ND**	**ND** UJ	102
EX-1-SWMB-35 (6)	P2201	**ND**	**ND**	**0.27** J	**0.09** J	99
EX-2-25N-50E-4	P2202	**ND**	**ND**	**ND** UJ	**ND** UJ	113
EX-2-25N-100E-4	P2203	**ND**	**ND**	**ND**	**2.66** J	97
EX-2-50N-125E-4	P2204	**ND**	**ND**	**ND**	**ND** UJ	99
EX-2-60N-125E-4	P2205	**ND**	**ND**	**ND**	**ND** UJ	100
BLANK	-	ND	ND	ND	ND	-
Quantification Limits	-	0.04	0.04	0.04	0.04	-

Surrogate is p-Bromofluorobenzene
ND = Not Detected (below reporting limit or detection limit)

We don't present LS

2/20/06

LABORATORY REPORT

Golder Associates
Attn: Steve Van Shaar / Paul Van Middlesworth
1200 W. Ironwood Dr., #102
Coeur d'Alene, ID 83814

PROJECT NAME/SITE:	Moses Lake MF	**REPORT NUMBER:**	57892
PROJECT NUMBER:	033-1335-002	**REPORT DATE:**	10-11-05
EXTRACTION DATE:	10-9-05	**PAGE:**	1 of 2
QC REPORT NUMBER:	Dx-051005-A1 Dx-051005-C1		

NWTPH-Dx

Analyte: Total Petroleum Hydrocarbon Quantification for soil (dry weight basis)

Field ID	Lab ID	Diesel mg/Kg (ppm)	Heavy Oil mg/Kg (ppm)	Surrogate Recovery (%)
EX-2-25N-50E-7	P2332	**ND**	**ND**	88
EX-2--50N-75E-6	P2333	**ND**	**ND**	83
EX-2-75N-140E-2WALL	P2334	**ND**	**ND**	90
EX-2-100N-130E-3WALL	P2335	**ND**	**250** J	116
EX-2-75N-50E-6 (B)	P2336	**ND**	**ND**	83
EX-2-90N-50E-7 (B)	P2337	**ND**	**ND**	86
EX-2-25N-100E-5WALL	P2338	**113** J	**223** J	113
EX-2-50N-125E-3WALL	P2339	**209** J	**251** J	124
BLANK	-	ND	ND	-
Reporting Limit	-	25	100	-

Surrogate is 2-fluorobiphenyl
ND = Not Detected (below reporting limit or detection limit)

NWTPH-Gx/5035A

Analyte: Total Petroleum Hydrocarbon Quantification for soil (dry weight basis)

Field ID	Lab ID	Matrix	mg/Kg (ppm)	Surrogate Recovery (%)
EX-2-25N-50E-7	P2332	SOIL	**ND**	100
EX-2--50N-75E-6	P2333	SOIL	**ND**	104
EX-2-75N-140E-2WALL	P2334	SOIL	**ND**	100
EX-2-100N-130E-3WALL	P2335	SOIL	**ND**	110
EX-2-75N-50E-6 (B)	P2336	SOIL	**ND**	102
EX-2-90N-50E-7 (B)	P2337	SOIL	**ND**	115
EX-2-25N-100E-5WALL	P2338	SOIL	**54** J	123
EX-2-50N-125E-3WALL	P2339	SOIL	**234** J	131
BLANK	-	-	ND	-
Reporting Limit	-	-	20	-

Surrogate is p-Bromofluorobenzene
ND = Not Detected (below reporting limit or detection limit)

2/20/06

LABORATORY REPORT

Golder Associates
Attn: Steve Van Shaar / Paul Van Middlesworth
1200 W. Ironwood Dr., #102
Coeur d'Alene, ID 83814

PROJECT NAME/SITE:	Moses Lake MF	**REPORT NUMBER:**	57892
PROJECT NUMBER:	033-1335-002	**REPORT DATE:**	10-11-05
EXTRACTION DATE:	10-9-05	**PAGE:**	2 of 2
QC REPORT NUMBER:	Dx-051005-A1 Dx-051005-C1		

EPA 8021B
Analyte: BTEX for soil (Benzene, Toluene, Ethylbenzene, Xylenes)

Field ID	Lab ID	Identification & Quantification mg/Kg (ppm)				Surrogate Recovery (%)
		Benzene	Toluene	Ethyl-Benzene	Xylenes	
EX-2-25N-50E-7	P2332	ND	ND	ND	0.07 J	100
EX-2--50N-75E-6	P2333	ND	ND	0.08 J	0.12 J	104
EX-2-75N-140E-2WALL	P2334	ND	ND	ND	ND	100
EX-2-100N-130E-3WALL	P2335	ND	ND	ND	0.07 J	110
EX-2-75N-50E-6 (B)	P2336	ND	ND	0.11 J	0.28 J	102
EX-2-90N-50E-7 (B)	P2337	ND	ND	ND	ND	115
EX-2-25N-100E-5WALL	P2338	ND	ND	ND	0.68 J	123
EX-2-50N-125E-3WALL	P2339	ND	ND	0.85 J	0.40 J	131
BLANK	-	ND	ND	ND	ND	-
Quantification Limits	-	0.04	0.04	0.04	0.04	-

Surrogate is p-Bromofluorobenzene
ND = Not Detected (below reporting limit or detection limit)

We don't present -LS

2/20/06

LABORATORY REPORT

Golder Associates
Attn: Steve Van Shaar / Paul Van Middlesworth
1200 W. Ironwood Dr., #102
Coeur d'Alene, ID 83814

PROJECT NAME/SITE:	Moses Lake MF	**REPORT NUMBER:**	57931
PROJECT NUMBER:	033-1335-002	**REPORT DATE:**	10-11-05
EXTRACTION DATE:	10-7-05	**PAGE:**	1 of 2

NWTPH-Dx
Analyte: Total Petroleum Hydrocarbon Quantification for soil (dry weight basis)

Field ID	Lab ID	Diesel mg/Kg (ppm)	Heavy Oil mg/Kg (ppm)	Surrogate Recovery (%)
EX-2-50N-10W-7B	P2535	**ND**	**ND**	70
EX-2-50N-40W-6B	P2536	**ND**	**ND**	68
EX-2-50N-60W-7B	P2537	**ND**	**ND**	66
EX-2-120N-50E-6B	P2538	**ND**	**ND**	64
EX-1-M-4W	P2539	**ND**	**ND**	64
EX-1-N-4W	P2540	**ND**	**ND**	61
EX-1-P-5W	P2541	**ND**	**ND**	61
BLANK	-	ND	ND	-
Reporting Limit	-	25	100	-

Surrogate is 2-fluorobiphenyl
ND = Not Detected (below reporting limit or detection limit)

NWTPH-Gx / 5035A
Analyte: Total Petroleum Hydrocarbon Quantification for soil (dry weight basis)

Field ID	Lab ID	Matrix	mg/Kg (ppm)	Surrogate Recovery (%)
EX-2-50N-10W-7B	P2535	SOIL	**ND**	100
EX-2-50N-40W-6B	P2536	SOIL	**ND**	109
EX-2-50N-60W-7B	P2537	SOIL	**ND**	123
EX-2-120N-50E-6B	P2538	SOIL	**ND**	128
EX-1-M-4W	P2539	SOIL	**ND**	105
EX-1-N-4W	P2540	SOIL	**ND**	107
EX-1-P-5W	P2541	SOIL	**ND**	109
BLANK	-	-	ND	-
Reporting Limit	-	-	20	-

Surrogate is p-Bromofluorobenzene
ND = Not Detected (below reporting limit or detection limit)

2/20/06

LABORATORY REPORT

Golder Associates
Attn: Steve Van Shaar / Paul Van Middlesworth
1200 W. Ironwood Dr., #102
Coeur d'Alene, ID 83814

PROJECT NAME/SITE: Moses Lake MF
PROJECT NUMBER: 033-1335-002
EXTRACTION DATE: 10-7-05
REPORT NUMBER: 57931
REPORT DATE: 10-11-05
PAGE: 2 of 2

EPA 8021B / 5035A
Analyte: BTEX for soil (Benzene, Toluene, Ethylbenzene, Xylenes)

Field ID	Lab ID	Identification & Quantification mg/Kg (ppm)				Surrogate Recovery (%)
		Benzene	Toluene	Ethyl-Benzene	Xylenes	
EX-2-50N-10W-7B	P2535	**ND**	**0.06 J**	**ND**	**0.09 J**	100
EX-2-50N-40W-6B	P2536	**ND**	**ND**	**ND**	**ND**	109
EX-2-50N-60W-7B	P2537	**ND**	**ND**	**ND**	**ND**	123
EX-2-120N-50E-6B	P2538	**ND**	**ND**	**ND**	**ND**	128
EX-1-M-4W	P2539	**ND**	**ND**	**ND**	**ND**	105
EX-1-N-4W	P2540	**ND**	**ND**	**ND**	**ND**	107
EX-1-P-5W	P2541	**ND**	**ND**	**ND**	**ND**	109
BLANK	-	ND	ND	ND	ND	-
Quantification Limits	-	0.04	0.04	0.04	0.04	-

Surrogate is p-Bromofluorobenzene
ND = Not Detected (below reporting limit or detection limit)

10/20/06

LABORATORY REPORT

Golder Associates
Attn: Steven Van Shaar / Paul Van Middlesworth
1200 W. Ironwood Dr., #102
Coeur d'Alene, ID 83814

PROJECT NAME/SITE: Moses Lake MF
PROJECT NUMBER: 033-1335-002
EXTRACTION DATE: 10-10-05

REPORT NUMBER: 57950
REPORT DATE: 10-12-05
PAGE: 1 of 2

QC REPORT NUMBER: Dx-051010-A1

NWTPH-Dx
Analyte: Total Petroleum Hydrocarbon Quantification for soil (dry weight basis)

Field ID	Lab ID	Diesel mg/Kg (ppm)	Heavy Oil mg/Kg (ppm)	Surrogate Recovery (%)
EX-1-Q-6B	P2592	**ND**	**ND**	59
EX-1-R-6W	P2593	**ND**	**ND**	65
EX-1-S-6B	P2594	**ND**	**ND**	60
EX-2-90N-100E-3B	P2595	**ND**	**ND**	59
EX-2-140N-150E-3B	P2596	**ND**	**ND**	57
BLANK	-	ND	ND	-
Reporting Limit	-	25	100	-

Surrogate is 2-fluorobiphenyl
ND = Not Detected (below reporting limit or detection limit)

NWTPH-Gx/5035A
Analyte: Total Petroleum Hydrocarbon Quantification for soil (dry weight basis)

Field ID	Lab ID	Matrix	mg/Kg (ppm)	Surrogate Recovery (%)
EX-1-Q-6B	P2592	SOIL	~~ND~~ UJ	104
EX-1-R-6W	P2593	SOIL	~~ND~~	105
EX-1-S-6B	P2594	SOIL	~~ND~~	112
EX-2-90N-100E-3B	P2595	SOIL	~~ND~~	118
EX-2-140N-150E-3B	P2596	SOIL	~~ND~~	106
BLANK	-	-	ND	-
Reporting Limit	-	-	20	-

Surrogate is p-Bromofluorobenzene
ND = Not Detected (below reporting limit or detection limit)

Jac 2/20/06

LABORATORY REPORT

Golder Associates
Attn: Steven Van Shaar / Paul Van Middlesworth
1200 W. Ironwood Dr., #102
Coeur d'Alene, ID 83814

PROJECT NAME/SITE:	Moses Lake MF	**REPORT NUMBER:**	57950
PROJECT NUMBER:	033-1335-002	**REPORT DATE:**	10-12-05
EXTRACTION DATE:	10-10-05	**PAGE:**	2 of 2

EPA 8021B/5035A
Analyte: BTEX for soil (Benzene, Toluene, Ethylbenzene, Xylenes)

Field ID	Lab ID	Identification & Quantification mg/Kg (ppm)				Surrogate Recovery (%)
		Benzene	Toluene	Ethyl-Benzene	Xylenes	
EX-1-Q-6B	P2592	ND UJ	ND UJ	ND UJ	ND UJ	104
EX-1-R-6W	P2593	ND	ND	ND	ND	105
EX-1-S-6B	P2594	ND	ND	ND	ND	112
EX-2-90N-100E-3B	P2595	ND	ND	ND	ND	118
EX-2-140N-150E-3B	P2596	ND	ND	ND	ND	106
BLANK	-	ND	ND	ND	ND	-
Quantification Limits	-	0.04	0.04	0.04	0.04	-

Surrogate is p-Bromofluorobenzene
ND = Not Detected (below reporting limit or detection limit)

JW 2/20/06

LABORATORY REPORT

Golder Associates
Attn: Steven Van Shaar
1200 W. Ironwood Dr., #102
Coeur d'Alene, ID 83814

PROJECT NAME/SITE:	Moses Lake MF	**REPORT NUMBER:**	57988
PROJECT NUMBER:	033-1335-002	**REPORT DATE:**	10-14-05
EXTRACTION DATE:	10-12-05	**PAGE:**	1 of 2

NWTPH-Dx
Analyte: Total Petroleum Hydrocarbon Quantification for soil (dry weight basis)

Field ID	Lab ID	Diesel mg/Kg (ppm)	Heavy Oil mg/Kg (ppm)	Surrogate Recovery (%)
EX-2-180N-130E-3B	P2707	**ND**	**ND**	70
EX-2-125N-150E-2W	P2708	**ND**	**ND**	68
EX-2-190N-135E-2W	P2709	**ND**	**ND**	103
EX-2-180N-70E-3W	P2710	**ND**	**ND**	76
EX-2-140N-100E-4B	P2711	**ND**	**ND**	69
EX-2195N-45E-4W	P2712	**ND**	**366 J**	94
EX-2-180N-40E-6B	P2713	**ND**	**ND**	69
BLANK	-	ND	ND	-
Reporting Limit	-	25	100	-

Surrogate is 2-fluorobiphenyl
ND = Not Detected (below reporting limit or detection limit)

NWTPH-Gx/5035A
Analyte: Total Petroleum Hydrocarbon Quantification for soil (dry weight basis)

Field ID	Lab ID	Matrix	mg/Kg (ppm)	Surrogate Recovery (%)
EX-2-180N-130E-3B	P2707	SOIL	**ND**	87
EX-2-125N-150E-2W	P2708	SOIL	**ND**	91
EX-2-190N-135E-2W	P2709	SOIL	**ND**	100
EX-2-180N-70E-3W	P2710	SOIL	**ND**	90
EX-2-140N-100E-4B	P2711	SOIL	**ND**	88
EX-2195N-45E-4W	P2712	SOIL	**ND**	88
EX-2-180N-40E-6B	P2713	SOIL	**ND**	93
BLANK	-	-	ND	-
Reporting Limit	-	-	20	-

Surrogate is p-Bromofluorobenzene
ND = Not Detected (below reporting limit or detection limit)

Jm 2/20/06

LABORATORY REPORT

Golder Associates
Attn: Steven Van Shaar
1200 W. Ironwood Dr., #102
Coeur d'Alene, ID 83814

PROJECT NAME/SITE:	Moses Lake MF	**REPORT NUMBER:**	57988
PROJECT NUMBER:	033-1335-002	**REPORT DATE:**	10-14-05
EXTRACTION DATE:	10-12-05	**PAGE:**	2 of 2

EPA 8021B/5035A
Analyte: BTEX for soil (Benzene, Toluene, Ethylbenzene, Xylenes)

Field ID	Lab ID	Identification & Quantification mg/Kg (ppm)				Surrogate
		Benzene	Toluene	Ethyl-Benzene	Xylenes	Recovery (%)
EX-2-180N-130E-3B	P2707	**ND**	**ND**	**ND**	**0.04**	87
EX-2-125N-150E-2W	P2708	**ND**	**ND**	**ND**	**ND**	91
EX-2-190N-135E-2W	P2709	**ND**	**ND**	**ND**	**ND**	100
EX-2-180N-70E-3W	P2710	**ND**	**ND**	**ND**	**ND**	90
EX-2-140N-100E-4B	P2711	**ND**	**ND**	**ND**	**ND**	88
EX-2195N-45E-4W	P2712	**ND**	**ND**	**ND**	**ND**	88
EX-2-180N-40E-6B	P2713	**ND**	**ND**	**ND**	**ND**	93
BLANK	-	ND	ND	ND	ND	-
Quantification Limits	-	0.04	0.04	0.04	0.04	-

Surrogate is p-Bromofluorobenzene
ND = Not Detected (below reporting limit or detection limit)

Jmc 2/20/06

LABORATORY REPORT

Golder Associates
Attn: Steven Van Shaar
1200 W. Ironwood Dr., #102
Coeur d'Alene, ID 83814

PROJECT NAME/SITE:	Moses Lake MF	**REPORT NUMBER:**	58116
PROJECT NUMBER:	033-1335-002	**REPORT DATE:**	10-20-05
EXTRACTION DATE:	10-20-05	**PAGE:**	1 of 2

NWTPH-Gx/5035A
Analyte: Total Petroleum Hydrocarbon Quantification for soil (dry weight basis)

Field ID	Lab ID	Matrix	mg/Kg (ppm)	Surrogate Recovery (%)
EX-2-80N-5E-7B	P3071	SOIL	**ND**	83
EX-2-80N-45W-7B	P3072	SOIL	**ND**	66
EX-2-120N-40W-5B	P3073	SOIL	**ND**	83
EX-2-190N-60E-4W	P3074	SOIL	**ND**	77
EX-2-175N-90E-3W	P3075	SOIL	**ND**	78
BLANK	-	-	ND	-
Reporting Limit	-	-	20	-

Surrogate is p-Bromofluorobenzene
ND = Not Detected (below reporting limit or detection limit)

EPA 8021B/5035A
Analyte: BTEX for soil (Benzene, Toluene, Ethylbenzene, Xylenes)

Field ID	Lab ID	Identification & Quantification mg/Kg (ppm)				Surrogate Recovery (%)
		Benzene	Toluene	Ethyl-Benzene	Xylenes	
EX-2-80N-5E-7B	P3071	**ND**	**ND**	**ND**	**ND**	83
EX-2-80N-45W-7B	P3072	**ND**	**ND**	**ND**	**ND**	66
EX-2-120N-40W-5B	P3073	**ND**	**ND**	**ND**	**ND**	83
EX-2-190N-60E-4W	P3074	**ND**	**ND**	**ND**	**0.18** J	77
EX-2-175N-90E-3W	P3075	**ND**	**ND**	**ND**	**ND**	78
BLANK	-	ND	ND	ND	ND	-
Quantification Limits	-	0.04	0.04	0.04	0.04	-

Surrogate is p-Bromofluorobenzene
ND = Not Detected (below reporting limit or detection limit)

Jm 2/20/06

LABORATORY REPORT

Golder Associates
Attn: Steven Van Shaar
1200 W. Ironwood Dr., #102
Coeur d'Alene, ID 83814

PROJECT NAME/SITE:	Moses Lake MF	**REPORT NUMBER:**	58116
PROJECT NUMBER:	033-1335-002	**REPORT DATE:**	10-20-05
EXTRACTION DATE:	10-20-05	**PAGE:**	2 of 2

NWTPH-Dx
Analyte: Total Petroleum Hydrocarbon Quantification for soil (dry weight basis)

Field ID	Lab ID	Diesel mg/Kg (ppm)	Heavy Oil mg/Kg (ppm)	Surrogate Recovery (%)
EX-2-80N-5E-7B	P3071	**ND**	**ND**	66
EX-2-80N-45W-7B	P3072	**ND**	**ND**	68
EX-2-120N-40W-5B	P3073	**ND**	**ND**	65
EX-2-190N-60E-4W	P3074	**ND**	**ND**	59
EX-2-175N-90E-3W	P3075	**ND**	**409** J	95
BLANK	-	ND	ND	-
Reporting Limit	-	25	100	-

Surrogate is 2-fluorobiphenyl
ND = Not Detected (below reporting limit or detection limit)

Jm 2/20/06

LABORATORY REPORT

Golder Associates
Attn: Steven Van Shaar
1200 W. Ironwood Dr., #102
Coeur d'Alene, ID 83814

PROJECT NAME/SITE:	Moses Lake MF	**REPORT NUMBER:**	58196
PROJECT NUMBER:	033-1335-002	**REPORT DATE:**	10-27-05
EXTRACTION DATE:	10-26-05	**PAGE:**	1 of 2

NWTPH-Dx
Analyte: Total Petroleum Hydrocarbon Quantification for soil (dry weight basis)

Field ID	Lab ID	Diesel mg/Kg (ppm)	Heavy Oil mg/Kg (ppm)	Surrogate Recovery (%)
EX-2-150N-45W-4W	P3376	**ND**	**7,250**	106
EX-2-150N-45W-4WD	P3377	**ND**	**6,830**	105
EX-2-35N-10W-5W	P3378	**ND**	**10,000**	109
EX-2-35N-10W-5WD	P3379	**38**	**3,040**	99
EX-2-125N-60W-4W	P3380	**ND**	**263**	87
EX-2-35N-40W-4W	P3381	**ND**	**ND**	84
EX-2-35N-40W-6W	P3382	**ND**	**ND**	93
EX-2-90N-60W-5W	P3383	**ND**	**ND**	82
EX-2-55N-60W-5W	P3384	**27**	**218**	92
EX-2-55N-60W-6W	P3385	**ND**	**ND**	85
BLANK	-	ND	ND	-
Reporting Limit	-	25	100	-

Surrogate is 2-fluorobiphenyl
ND = Not Detected (below reporting limit or detection limit)

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NWTPH-Gx/5035A
Analyte: Total Petroleum Hydrocarbon Quantification for soil (dry weight basis)

Field ID	Lab ID	Matrix	mg/Kg (ppm)	Surrogate Recovery (%)
EX-2-150N-45W-4W	P3376	SOIL	**ND**	79
EX-2-150N-45W-4WD	P3377	SOIL	**37**	72
EX-2-35N-10W-5W	P3378	SOIL	**ND**	78
EX-2-35N-10W-5WD	P3379	SOIL	**ND**	80
EX-2-125N-60W-4W	P3380	SOIL	**ND**	85
EX-2-35N-40W-4W	P3381	SOIL	**ND**	91
EX-2-35N-40W-6W	P3382	SOIL	**ND**	84
EX-2-90N-60W-5W	P3383	SOIL	**ND**	87
EX-2-55N-60W-5W	P3384	SOIL	**ND**	88
EX-2-55N-60W-6W	P3385	SOIL	**ND**	87
BLANK	-	-	ND	-
Reporting Limit	-	-	20	-

Surrogate is p-Bromofluorobenzene
ND = Not Detected (below reporting limit or detection limit)

2/20/06

LABORATORY REPORT

Golder Associates
Attn: Steven Van Shaar
1200 W. Ironwood Dr , #102
Coeur d'Alene, ID 83814

PROJECT NAME/SITE:	Moses Lake MF	**REPORT NUMBER:**	58196
PROJECT NUMBER:	033-1335-002	**REPORT DATE:**	10-27-05
EXTRACTION DATE:	10-26-05	**PAGE:**	2 of 2

EPA 8021B/5035A
Analyte: BTEX for soil (Benzene, Toluene, Ethylbenzene, Xylenes)

Field ID	Lab ID	Identification & Quantification mg/Kg (ppm)				Surrogate Recovery (%)
		Benzene	Toluene	Ethyl-Benzene	Xylenes	
EX-2-150N-45W-4W	P3376	**ND**	**ND**	**ND**	**ND**	79
EX-2-150N-45W-4WD	P3377	**ND**	**ND**	**0.26**	**0.37**	72
EX-2-35N-10W-5W	P3378	**ND**	**ND**	**ND**	**ND**	78
EX-2-35N-10W-5WD	P3379	**ND**	**ND**	**ND**	**ND**	80
EX-2-125N-60W-4W	P3380	**ND**	**ND**	**ND**	**ND**	85
EX-2-35N-40W-4W	P3381	**ND**	**ND**	**ND**	**ND**	91
EX-2-35N-40W-6W	P3382	**ND**	**ND**	**ND**	**ND**	84
EX-2-90N-60W-5W	P3383	**ND**	**ND**	**ND**	**ND**	87
EX-2-55N-60W-5W	P3384	**ND**	**ND**	**ND**	**ND**	88
EX-2-55N-60W-6W	P3385	**ND**	**ND**	**ND**	**ND**	87
BLANK	-	ND	ND	ND	ND	-
Quantification Limits	-	0.04	0.04	0.04	0.04	-

Surrogate is p-Bromofluorobenzene
ND = Not Detected (below reporting limit or detection limit)

2/20/06

2/20/06

LABORATORY REPORT

Golder Associates
Attn: Steven Van Shaar
18300 NE Union Hill Rd.
Redmond, WA 98052

PROJECT NAME/SITE:	Moses Lake MF	**REPORT NUMBER:**	58420
PROJECT NUMBER:	033-1335-004	**REPORT DATE:**	11-14-05
EXTRACTION DATE:	11-11-05	**PAGE:**	1 of 1

QC REPORT NUMBER: Dx-051111-A1

NWTPH-Dx

Analyte: Total Petroleum Hydrocarbon Quantification for soil (dry weight basis)

Field ID	Lab ID	Diesel mg/Kg (ppm)	Heavy Oil mg/Kg (ppm)	Surrogate Recovery (%)
EX-2-10N-30E-4W	P4114	**28** J	**440** J	104
BLANK	-	ND	ND	-
Reporting Limit	-	25	100	-

Surrogate is 2-fluorobiphenyl
ND = Not Detected (below reporting limit or detection limit)

NWTPH-Gx/5035A

Analyte: Total Petroleum Hydrocarbon Quantification for soil (dry weight basis)

Field ID	Lab ID	Matrix	mg/Kg (ppm)	Surrogate Recovery (%)
EX-2-10N-30E-4W	P4114	SOIL	**ND**	100
BLANK	-	-	ND	-
Reporting Limit	-	-	20	-

Surrogate is p-Bromofluorobenzene
ND = Not Detected (below reporting limit or detection limit)

EPA 8021B/5035A

Analyte: BTEX for soil (Benzene, Toluene, Ethylbenzene, Xylenes)

Field ID	Lab ID	Identification & Quantification mg/Kg (ppm)				Surrogate Recovery (%)
		Benzene	Toluene	Ethyl-Benzene	Xylenes	
EX-2-10N-30E-4W	P4114	**ND**	**ND**	**ND**	**0.07** J	100
BLANK	-	ND	ND	ND	ND	-
Quantification Limits	-	0.04	0.04	0.04	0.04	-

Surrogate is p-Bromofluorobenzene
ND = Not Detected (below reporting limit or detection limit)

Jv 2/20/06

LABORATORY REPORT

Golder Associates
Attn: Steven VanShaar
18300 NE Union Hill Rd
Redmond, WA 98052

PROJECT NAME/SITE:	Moses Lake MF	**REPORT NUMBER:**	58499
PROJECT NUMBER:	033-1335-004	**REPORT DATE:**	11-18-05
EXTRACTION DATE:	11-17-05	**PAGE:**	1 of 1
QC REPORT NUMBER:	Dx-051117-C1		

NWTPH-Dx
Analyte: Total Petroleum Hydrocarbon Quantification for soil (dry weight basis)

Field ID	Lab ID	Diesel mg/Kg (ppm)	Heavy Oil mg/Kg (ppm)	Surrogate Recovery (%)
SP-1-200N-40E-C	P4393	**26** J	**172** J	91
SP-2-ON-40E-C	P4394	**42** J	**452** J	85
BLANK	-	ND	ND	-
Reporting Limit	-	25	100	-

Surrogate is 2-fluorobiphenyl
ND = Not Detected (below reporting limit or detection limit)

NWTPH-Gx
Analyte: Total Petroleum Hydrocarbon Quantification for soil (dry weight basis)

Field ID	Lab ID	Matrix	mg/Kg (ppm)	Surrogate Recovery (%)
SP-1-200N-40E-C	P4393	SOIL	**ND**	97
SP-2-ON-40E-C	P4394	SOIL	**ND**	97
BLANK	-	-	ND	-
Reporting Limit	-	-	20	-

Surrogate is p-Bromofluorobenzene
ND = Not Detected (below reporting limit or detection limit)

EPA 8021B
Analyte: BTEX for soil (Benzene, Toluene, Ethylbenzene, Xylenes)

Field ID	Lab ID	Identification & Quantification mg/Kg (ppm)				Surrogate Recovery (%)
		Benzene	Toluene	Ethyl-Benzene	Xylenes	
SP-1-200N-40E-C	P4393	**ND**	**ND**	**ND**	**ND**	97
SP-2-ON-40E-C	P4394	**ND**	**ND**	**ND**	**ND**	94
BLANK	-	ND	ND	ND	ND	-
Quantification Limits	-	0.04	0.04	0.04	0.04	-

Surrogate is p-Bromofluorobenzene
ND = Not Detected (below reporting limit or detection limit)

Jm 2/20/06.

LABORATORY REPORT

Golder Associates
Attn: Steven VanShaar
18300 NE Union Hill Rd.
Redmond, WA 98052

PROJECT NAME/SITE:	Moses Lake MF	**REPORT NUMBER:**	58526
PROJECT NUMBER:	033-1335-004	**REPORT DATE:**	11-21-05
EXTRACTION DATE:	11-21-04	**PAGE:**	2 of 2

EPA 8021B/5035A
Analyte: BTEX for soil (Benzene, Toluene, Ethylbenzene, Xylenes)

Field ID	Lab ID	Identification & Quantification mg/Kg (ppm)				Surrogate Recovery (%)
		Benzene	Toluene	Ethyl-Benzene	Xylenes	
EX-2-270N-2E-5W	P4480	**ND**	**ND**	**0.12**	**0.15**	82
EX-2-290N-10W-4W	P4481	**ND**	**ND**	**ND**	**ND**	79
EX-2-240N-15E-5W	P4482	**ND**	**ND**	**ND**	**ND**	80
EX-2-220N-OE-6B	P4483	**ND**	**ND**	**ND**	**ND**	79
EX-2-220N-OE-6BD	P4484	**ND**	**ND**	**ND**	**ND**	89
BLANK	-	ND	ND	ND	ND	-
Quantification Limits	-	0.04	0.04	0.04	0.04	-

Surrogate is p-Bromofluorobenzene
ND = Not Detected (below reporting limit or detection limit)

Jm 2/20/06

LABORATORY REPORT

Golder Associates
Attn: Steven VanShaar
18300 NE Union Hill Rd
Redmond, WA 98052

PROJECT NAME/SITE:	Moses Lake MF	**REPORT NUMBER:**	58526
PROJECT NUMBER:	033-1335-004	**REPORT DATE:**	11-21-05
EXTRACTION DATE:	11-21-04	**PAGE:**	1 of 2

NWTPH-Dx
Analyte: Total Petroleum Hydrocarbon Quantification for soil (dry weight basis)

Field ID	Lab ID	Diesel mg/Kg (ppm)	Heavy Oil mg/Kg (ppm)	Surrogate Recovery (%)
EX-2-270N-2E-5W	P4480	**131**	**113**	106
EX-2-290N-10W-4W	P4481	**1,340**	**4,930**	*
EX-2-240N-15E-5W	P4482	**ND**	**280**	84
EX-2-220N-OE-6B	P4483	**ND**	**ND**	95
EX-2-220N-OE-6BD	P4484	**ND**	**ND**	97
BLANK	-	ND	ND	-
Reporting Limit	-	25	100	-

Surrogate is 2-fluorobiphenyl
ND = Not Detected (below reporting limit or detection limit)

* Surrogate peak is not discernible on chromatogram from analyte peak.

NWTPH-Gx/5035A
Analyte: Total Petroleum Hydrocarbon Quantification for soil (dry weight basis)

Field ID	Lab ID	Matrix	mg/Kg (ppm)	Surrogate Recovery (%)
EX-2-270N-2E-5W	P4480	SOIL	**26** J	82
EX-2-290N-10W-4W	P4481	SOIL	**ND** UJ	79
EX-2-240N-15E-5W	P4482	SOIL	**ND** UJ	80
EX-2-220N-OE-6B	P4483	SOIL	**ND**	79
EX-2-220N-OE-6BD	P4484	SOIL	**ND**	89
BLANK	-	-	ND	-
Reporting Limit	-	-	20	-

Surrogate is p-Bromofluorobenzene
ND = Not Detected (below reporting limit or detection limit)

2/20/06

LABORATORY REPORT

Golder Associates
Attn: Steven VanShaar
18300 NE Union Hill Rd.
Redmond, WA 98052

PROJECT NAME/SITE:	Moses Lake MF	**REPORT NUMBER:**	58570
PROJECT NUMBER:	033-1335-004	**REPORT DATE:**	11-23-05
EXTRACTION DATE:	11-23-05	**PAGE:**	2 of 2

EPA 8021B/5035A
Analyte: BTEX for soil (Benzene, Toluene, Ethylbenzene, Xylenes)

Field ID	Lab ID	Identification & Quantification mg/Kg (ppm)				Surrogate Recovery (%)
		Benzene	Toluene	Ethyl-Benzene	Xylenes	
EX-2-40N-150E-4W	P4614	**ND**	**ND**	**ND**	**0.05**	99
EX-2-55N-150E-4W	P4615	**ND**	**ND**	**ND**	**ND**	105
EX-2-10N-115E-4W	P4616	**ND**	**ND**	**ND**	**ND**	113
EX-2-10N-115E-4WD	P4617	**ND**	**ND**	**ND**	**ND**	108
BLANK	-	ND	ND	ND	ND	-
Quantification Limits	-	0.04	0.04	0.04	0.04	-

Surrogate is p-Bromofluorobenzene
ND = Not Detected (below reporting limit or detection limit)

2/20/06

LABORATORY REPORT

Golder Associates
Attn: Steven VanShaar
18300 NE Union Hill Rd.
Redmond, WA 98052

PROJECT NAME/SITE:	Moses Lake MF	**REPORT NUMBER:**	58570
PROJECT NUMBER:	033-1335-004	**REPORT DATE:**	11-23-05
EXTRACTION DATE:	11-23-05	**PAGE:**	1 of 2

NWTPH-Dx
Analyte: Total Petroleum Hydrocarbon Quantification for soil (dry weight basis)

Field ID	Lab ID	Diesel mg/Kg (ppm)	Heavy Oil mg/Kg (ppm)	Surrogate Recovery (%)
EX-2-40N-150E-4W	P4614	**ND**	**108**	92
EX-2-55N-150E-4W	P4615	**ND**	**2,540**	102
EX-2-10N-115E-4W	P4616	**ND**	**760**	88
EX-2-10N-115E-4WD	P4617	**ND**	**210**	86
BLANK	-	ND	ND	-
Reporting Limit	-	25	100	-

Surrogate is 2-fluorobiphenyl
ND = Not Detected (below reporting limit or detection limit)

NWTPH-Gx/5035A
Analyte: Total Petroleum Hydrocarbon Quantification for soil (dry weight basis)

Field ID	Lab ID	Matrix	mg/Kg (ppm)	Surrogate Recovery (%)
EX-2-40N-150E-4W	P4614	SOIL	**ND** UJ	99
EX-2-55N-150E-4W	P4615	SOIL	**ND**	105
EX-2-10N-115E-4W	P4616	SOIL	**ND**	113
EX-2-10N-115E-4WD	P4617	SOIL	**ND**	108
BLANK	-	-	ND	-
Reporting Limit	-	-	20	-

Surrogate is p-Bromofluorobenzene
ND = Not Detected (below reporting limit or detection limit)

2/20/06

LABORATORY REPORT

Golder Associates
Attn: Steven VanShaar
18300 NE Union Hill Rd.
Redmond, WA 98052

PROJECT NAME/SITE:	Moses Lake MF	**REPORT NUMBER:**	58593
PROJECT NUMBER:	033-1335-004	**REPORT DATE:**	11-28-05
EXTRACTION DATE:	11-28-05	**PAGE:**	2 of 2

EPA 8021B/5035A
Analyte: BTEX for soil (Benzene, Toluene, Ethylbenzene, Xylenes)

Field ID	Lab ID	Identification & Quantification mg/Kg (ppm)				Surrogate Recovery (%)
		Benzene	Toluene	Ethyl-Benzene	Xylenes	
EX-2-285N-50W-3.5W	P4715	**ND** UJ	**ND** UJ	**ND** UJ	**ND** UJ	73
EX-2-240N-25W-4W	P4716	**ND**	**ND**	**ND**	**ND**	79
EX-2-230N-10W-5B	P4717	**ND**	**ND**	**ND**	**ND**	81
EX-2-230N-10W-5BD	P4718	**ND**	**ND**	**ND**	**ND**	83
BLANK	-	ND	ND	ND	ND	-
Quantification Limits	-	0.04	0.04	0.04	0.04	-

Surrogate is p-Bromofluorobenzene
ND = Not Detected (below reporting limit or detection limit)

JW 2/20/06

033-1335-004 004

Wy'East

Wy'East Environmental Sciences, Inc.

LABORATORY REPORT

Golder Associates
Attn: Steven VanShaar
18300 NE Union Hill Rd
Redmond, WA 98052

PROJECT NAME/SITE:	Moses Lake MF	**REPORT NUMBER:**	58593
PROJECT NUMBER:	033-1335-004	**REPORT DATE:**	11-28-05
EXTRACTION DATE:	11-28-05	**PAGE:**	1 of 2

NWTPH-Dx
Analyte: Total Petroleum Hydrocarbon Quantification for soil (dry weight basis)

Field ID	Lab ID	Diesel mg/Kg (ppm)	Heavy Oil mg/Kg (ppm)	Surrogate Recovery (%)
EX-2-285N-50W-3.5W	P4715	**ND**	**ND**	102
EX-2-240N-25W-4W	P4716	**ND**	**ND**	85
EX-2-230N-10W-5B	P4717	**ND**	**ND**	86
EX-2-230N-10W-5BD	P4718	**ND**	**ND**	86
BLANK	-	ND	ND	-
Reporting Limit	-	25	100	-

Surrogate is 2-fluorobiphenyl
ND = Not Detected (below reporting limit or detection limit)

NWTPH-Gx/5035A
Analyte: Total Petroleum Hydrocarbon Quantification for soil (dry weight basis)

Field ID	Lab ID	Matrix	mg/Kg (ppm)	Surrogate Recovery (%)
EX-2-285N-50W-3.5W	P4715	SOIL	**ND** U5	73
EX-2-240N-25W-4W	P4716	SOIL	**ND**	79
EX-2-230N-10W-5B	P4717	SOIL	**ND**	81
EX-2-230N-10W-5BD	P4718	SOIL	**ND**	83
BLANK	-	-	ND	-
Reporting Limit	-	-	20	-

Surrogate is p-Bromofluorobenzene
ND = Not Detected (below reporting limit or detection limit)

11/30/06

LABORATORY REPORT

Golder Associates
Attn: Steven VanShaar
18300 NE Union Hill Rd.
Redmond, WA 98052

PROJECT NAME/SITE:	Moses Lake MF	**REPORT NUMBER:**	58668
PROJECT NUMBER:	033-1335-004	**REPORT DATE:**	12-5-05
EXTRACTION DATE:	12-5-05	**PAGE:**	1 of 2

NWTPH-Dx
Analyte: Total Petroleum Hydrocarbon Quantification for soil (dry weight basis)

Field ID	Lab ID	Diesel mg/Kg (ppm)	Heavy Oil mg/Kg (ppm)	Surrogate Recovery (%)
EX-2-20N-20W-5W	P4929	**ND**	**ND**	89
EX-2-55N-160E-4W	P4930	**ND**	**ND**	92
EX-2-20N-20W-5WD	P4931	**ND**	**ND**	87
SP-3-200N-40W-C	P4932	**ND**	**ND**	94
SP-4-40N-160E-C	P4933	**ND**	**ND**	100
BLANK	-	ND	ND	-
Reporting Limit	-	25	100	-

Surrogate is 2-fluorobiphenyl
ND = Not Detected (below reporting limit or detection limit)

NWTPH-Gx/5035A
Analyte: Total Petroleum Hydrocarbon Quantification for soil (dry weight basis)

Field ID	Lab ID	Matrix	mg/Kg (ppm)	Surrogate Recovery (%)
EX-2-20N-20W-5W	P4929	SOIL	**ND** U J	100
EX-2-55N-160E-4W	P4930	SOIL	**ND**	97
EX-2-20N-20W-5WD	P4931	SOIL	**ND**	100
BLANK	-	-	ND	-
Reporting Limit	-	-	20	-

Surrogate is p-Bromofluorobenzene
ND = Not Detected (below reporting limit or detection limit)

NWTPH-Gx
Analyte: Total Petroleum Hydrocarbon Quantification for soil (dry weight basis)

Field ID	Lab ID	Matrix	mg/Kg (ppm)	Surrogate Recovery (%)
SP-3-200N-40W-C	P4932	SOIL	**ND** U J	106
SP-4-40N-160E-C	P4933	SOIL	**ND**	101
BLANK	-	-	ND	-
Reporting Limit	-	-	20	-

Surrogate is p-Bromofluorobenzene
ND = Not Detected (below reporting limit or detection limit)

JM 2/20/06

LABORATORY REPORT

Golder Associates
Attn: Steven VanShaar
18300 NE Union Hill Rd.
Redmond, WA 98052

PROJECT NAME/SITE:	Moses Lake MF	**REPORT NUMBER:**	58640
PROJECT NUMBER:	033-1335-004	**REPORT DATE:**	12-1-05
EXTRACTION DATE:	12-1-05	**PAGE:**	1 of 1

NWTPH-Dx
Analyte: Total Petroleum Hydrocarbon Quantification for soil (dry weight basis)

Field ID	Lab ID	Diesel mg/Kg (ppm)	Heavy Oil mg/Kg (ppm)	Surrogate Recovery (%)
EX-2-180N-40W-5W	P4851	**ND**	**ND**	100
EX-2-170N-30W-5B	P4852	**ND**	**ND**	98
BLANK	-	ND	ND	-
Reporting Limit	-	25	100	-

Surrogate is 2-fluorobiphenyl
ND = Not Detected (below reporting limit or detection limit)

NWTPH-Gx/5035A
Analyte: Total Petroleum Hydrocarbon Quantification for soil (dry weight basis)

Field ID	Lab ID	Matrix	mg/Kg (ppm)	Surrogate Recovery (%)
EX-2-180N-40W-5W	P4851	SOIL	**ND** UJ ✓	97
EX-2-170N-30W-5B	P4852	SOIL	**ND** ↓ ✓	116
BLANK	-	-	ND	-
Reporting Limit	-	-	20	-

Surrogate is p-Bromofluorobenzene
ND = Not Detected (below reporting limit or detection limit)

EPA 8021B/5035A
Analyte: BTEX for soil (Benzene, Toluene, Ethylbenzene, Xylenes)

Field ID	Lab ID	Identification & Quantification mg/Kg (ppm)				Surrogate Recovery (%)
		Benzene	Toluene	Ethyl-Benzene	Xylenes	
EX-2-180N-40W-5W	P4851	**0.06** J ✓	**0.36** J ✓	**0.08** J ✓	**0.43** J ✓	97
EX-2-170N-30W-5B	P4852	**ND**	**ND**	**ND**	**ND**	106
BLANK	-	ND	ND	ND	ND	-
Quantification Limits	-	0.04	0.04	0.04	0.04	-

Surrogate is p-Bromofluorobenzene
ND = Not Detected (below reporting limit or detection limit)

2/20/06

LABORATORY REPORT

Golder Associates
18300 NE Union Hill Rd
Redmond, WA 98052

PROJECT NAME/SITE: Moses Lake MF
PROJECT NUMBER: 033-1335-004
EXTRACTION DATE: 12/13/05

REPORT NUMBER: 58775
REPORT DATE: 12/14/05
PAGE: 1 of 1

QC REPORT NUMBER: DX-051213-A1

NWTPH-Dx

Analyte: Total Petroleum Hydrocarbon Quantification for soil (dry weight basis)

Field ID	Lab ID	Diesel mg/Kg (ppm)	Heavy Oil mg/Kg (ppm)	Surrogate Recovery (%)
EX-2-300N-15W-3W	P5263	**ND**	**200** J	118%
EX-2-335N-25W-3W	P5264	**ND**	**361** J	118%
BLANK	-	ND	ND	-
Reporting Limit	-	25	100	-

Surrogate is 2-fluorobiphenyl
ND = Not Detected (below reporting limit or detection limit)

NWTPH-Gx/5035A

Analyte: Total Petroleum Hydrocarbon Quantification for soil (dry weight basis)

Field ID	Lab ID	Matrix	mg/Kg (ppm)	Surrogate Recovery (%)
EX-2-300N-15W-3W	P5263	SOIL	**ND** UJ	86%
EX-2-335N-25W-3W	P5264	SOIL	**ND** UJ	81%
BLANK	-	-	ND	-
Reporting Limit	-	-	20	-

Surrogate is p-Bromofluorobenzene
ND = Not Detected (below reporting limit or detection limit)

EPA 8021B/5035A

Analyte: BTEX for soil (Benzene, Toluene, Ethylbenzene, Xylenes)

Field ID	Lab ID	Identification & Quantification mg/Kg (ppm)				Surrogate Recovery (%)
		Benzene	Toluene	Ethyl-Benzene	Xylenes	
EX-2-300N-15W-3W	P5263	**ND** UJ	**ND** UJ	**ND** UJ	**0.04** J	86%
EX-2-335N-25W-3W	P5264	**ND** UJ	**ND** ↓	**ND** ↓	**ND** UJ	81%
BLANK	-	ND	ND	ND	ND	-
Quantification Limits	-	0.04	0.04	0.04	0.04	-

Surrogate is p-Bromofluorobenzene
ND = Not Detected (below reporting limit or detection limit)

Jan 2/26/06

LABORATORY REPORT

Golder Associates
Attn: Steven VanShaar
18300 NE Union Hill Rd.
Redmond, WA 98052

PROJECT NAME/SITE: Moses Lake MF
PROJECT NUMBER:
EXTRACTION DATE: 12-5-05

REPORT NUMBER: 58668
REPORT DATE: 12-5-05
PAGE: 2 of 2

EPA 8021B/5035A
Analyte: BTEX for soil (Benzene, Toluene, Ethylbenzene, Xylenes)

Field ID	Lab ID	Identification & Quantification mg/Kg (ppm)				Surrogate Recovery (%)
		Benzene	Toluene	Ethyl-Benzene	Xylenes	
EX-2-20N-20W-5W	P4929	**ND** UJ	**0.04** J	**ND** UJ	**0.17** J	100
EX-2-55N-160E-4W	P4930	**ND**	**ND** UJ	**ND**	**ND** UJ	97
EX-2-20N-20W-5WD	P4931	**ND**	**ND**	**ND**	**0.04** J	100
BLANK	-	ND	ND	ND	ND	-
Quantification Limits	-	0.04	0.04	0.04	0.04	-

Surrogate is p-Bromofluorobenzene
ND = Not Detected (below reporting limit or detection limit)

EPA 8021B
Analyte: BTEX for soil (Benzene, Toluene, Ethylbenzene, Xylenes)

Field ID	Lab ID	Identification & Quantification mg/Kg (ppm)				Surrogate Recovery (%)
		Benzene	Toluene	Ethyl-Benzene	Xylenes	
SP-3-200N-40W-C	P4932	**ND** UJ	**ND** UJ	**ND** UJ	**ND** UJ	106
SP-4-40N-160E-C	P4933	**ND**	**ND**	**ND**	**0.10** J	101
BLANK	-	ND	ND	ND	ND	-
Quantification Limits	-	0.04	0.04	0.04	0.04	-

Surrogate is p-Bromofluorobenzene
ND = Not Detected (below reporting limit or detection limit)

Jm 2/20/06

LABORATORY REPORT

Golder Associates
Attn: Steven VanShaar
18300 NE Union Hill Rd.
Redmond, WA 98052

PROJECT NAME/SITE:	Moses Lake MF	**REPORT NUMBER:**	58701
PROJECT NUMBER:	033-1335-004	**REPORT DATE:**	12-7-05
EXTRACTION DATE:	12-7-05	**PAGE:**	2 of 2

EPA 8021B/5035A
Analyte: BTEX for soil (Benzene, Toluene, Ethylbenzene, Xylenes)

Field ID	Lab ID	Identification & Quantification mg/Kg (ppm)				Surrogate Recovery (%)
		Benzene	Toluene	Ethyl-Benzene	Xylenes	
EX-2-20N-10E-5W	P5014	**ND**	**ND**	**ND**	**ND**	94
EX-2-30N-25W-4W	P5015	**ND**	**0.14**	**0.14**	**0.39**	83
EX-2-20N-10E-5WD	P5016	**ND**	**ND**	**ND**	**ND**	80
BLANK	-	ND	ND	ND	ND	-
Quantification Limits	-	0.04	0.04	0.04	0.04	-

Surrogate is p-Bromofluorobenzene
ND = Not Detected (below reporting limit or detection limit)

EPA 8021B
Analyte: BTEX for soil (Benzene, Toluene, Ethylbenzene, Xylenes)

Field ID	Lab ID	Identification & Quantification mg/Kg (ppm)				Surrogate Recovery (%)
		Benzene	Toluene	Ethyl-Benzene	Xylenes	
SP-5-20N-15E-C	P5017	**ND**	**ND**	**ND**	**0.04**	93
BLANK	-	ND	ND	ND	ND	-
Quantification Limits	-	0.04	0.04	0.04	0.04	-

Surrogate is p-Bromofluorobenzene
ND = Not Detected (below reporting limit or detection limit)

12/20/06

LABORATORY REPORT

Golder Associates
Attn: Steven VanShaar
18300 NE Union Hill Rd
Redmond, WA 98052

PROJECT NAME/SITE:	Moses Lake MF	**REPORT NUMBER:**	58701
PROJECT NUMBER:	033-1335-004	**REPORT DATE:**	12-7-05
EXTRACTION DATE:	12-7-05	**PAGE:**	1 of 2

NWTPH-Dx
Analyte: Total Petroleum Hydrocarbon Quantification for soil (dry weight basis)

Field ID	Lab ID	Diesel mg/Kg (ppm)	Heavy Oil mg/Kg (ppm)	Surrogate Recovery (%)
EX-2-20N-10E-5W	P5014	**ND**	**ND**	81
EX-2-30N-25W-4W	P5015	**117**	**391**	95
EX-2-20N-10E-5WD	P5016	**ND**	**ND**	96
SP-5-20N-15E-C	P5017	**ND**	**ND**	84
BLANK	-	ND	ND	-
Reporting Limit	-	25	100	-

Surrogate is 2-fluorobiphenyl
ND = Not Detected (below reporting limit or detection limit)

NWTPH-Gx/5035A
Analyte: Total Petroleum Hydrocarbon Quantification for soil (dry weight basis)

Field ID	Lab ID	Matrix	mg/Kg (ppm)	Surrogate Recovery (%)
EX-2-20N-10E-5W	P5014	SOIL	**ND**	94
EX-2-30N-25W-4W	P5015	SOIL	**ND**	83
EX-2-20N-10E-5WD	P5016	SOIL	**ND**	80
BLANK	-	-	ND	-
Reporting Limit	-	-	20	-

Surrogate is p-Bromofluorobenzene
ND = Not Detected (below reporting limit or detection limit)

NWTPH-Gx
Analyte: Total Petroleum Hydrocarbon Quantification for soil (dry weight basis)

Field ID	Lab ID	Matrix	mg/Kg (ppm)	Surrogate Recovery (%)
SP-5-20N-15E-C	P5017	SOIL	**ND**	93
BLANK	-	-	ND	-
Reporting Limit	-	-	20	-

Surrogate is p-Bromofluorobenzene
ND = Not Detected (below reporting limit or detection limit)

2/20/06

LABORATORY REPORT

Golder Associates
Attn: Steven VanShaar
18300 NE Union Hill Rd.
Redmond, WA 98052

PROJECT NAME/SITE:	Moses Lake MF	**REPORT NUMBER:**	58845
PROJECT NUMBER:	033-1335-004	**REPORT DATE:**	12-21-05
EXTRACTION DATE:	12-21-05	**PAGE:**	1 of 1

NWTPH-Dx
Analyte: Total Petroleum Hydrocarbon Quantification for soil (dry weight basis)

Field ID	Lab ID	Diesel mg/Kg (ppm)	Heavy Oil mg/Kg (ppm)	Surrogate Recovery (%)
EX-2-295N-30W-3W	P5535	**ND**	**ND**	118
EX-2-295N-30W-3WD	P5536	**ND**	**129**	130
EX-2-290N-20W-4B	P5537	**ND**	**ND**	128
BLANK	-	ND	ND	-
Reporting Limit	-	25	100	-

Surrogate is 2-fluorobiphenyl
ND = Not Detected (below reporting limit or detection limit)

NWTPH-Gx/5035A
Analyte: Total Petroleum Hydrocarbon Quantification for soil (dry weight basis)

Field ID	Lab ID	Matrix	mg/Kg (ppm)	Surrogate Recovery (%)
EX-2-295N-30W-3W	P5535	SOIL	**ND**	77
EX-2-295N-30W-3WD	P5536	SOIL	**ND**	77
EX-2-290N-20W-4B	P5537	SOIL	**ND**	75
BLANK	-	-	ND	-
Reporting Limit	-	-	20	-

Surrogate is p-Bromofluorobenzene
ND = Not Detected (below reporting limit or detection limit)

EPA 8021B/5035A
Analyte: BTEX for soil (Benzene, Toluene, Ethylbenzene, Xylenes)

Field ID	Lab ID	Identification & Quantification mg/Kg (ppm)				Surrogate Recovery (%)
		Benzene	Toluene	Ethyl-Benzene	Xylenes	
EX-2-295N-30W-3W	P5535	**ND**	**ND**	**ND**	**ND**	80
EX-2-295N-30W-3WD	P5536	**ND**	**0.19**	**0.04**	**0.20**	80
EX-2-290N-20W-4B	P5537	**ND**	**ND**	**ND**	**ND**	79
BLANK	-	ND	ND	ND	ND	-
Quantification Limits	-	0.04	0.04	0.04	0.04	-

Surrogate is p-Bromofluorobenzene
ND = Not Detected (below reporting limit or detection limit)

Jn 2/20/06

Date of Report: October 19, 2005
Samples Submitted: October 18, 2005
Laboratory Reference: 0510-122
Project: 033-1335-004

NWTPH-HCID

Date Extracted:	10-18-05
Date Analyzed:	10-18-05
Matrix:	Water
Units:	mg/L (ppm)
Client ID:	**EX-1-GW-101705**
Lab ID:	10-122-01
Gasoline:	**ND**
PQL:	0.10
Diesel Fuel:	**ND**
PQL:	0.25
Lube Oil:	**ND**
PQL:	0.40
Surrogate Recovery:	
o-Terphenyl	86%
Flags:	Y

Jm 2/20/06

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: October 19, 2005
Samples Submitted: October 18, 2005
Laboratory Reference: 0510-122
Project: 033-1335-004

NWTPH-Gx/BTEX

Date Extracted: 10-18-05
Date Analyzed: 10-18-05

Matrix: Water
Units: ug/L (ppb)

Client ID: **CF3-101705**
Lab ID: 10-122-02

	Result	Flags	PQL
Benzene	**ND**		1.0
Toluene	**ND**		1.0
Ethyl Benzene	**ND**		1.0
m,p-Xylene	**ND**		1.0
o-Xylene	**ND**		1.0
TPH-Gas	**ND**		100

Surrogate Recovery:
Fluorobenzene 82%

Jm 2/20/06

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: October 19, 2005
Samples Submitted: October 18, 2005
Laboratory Reference: 0510-122
Project: 033-1335-004

NWTPH-Dx

Date Extracted:	10-18-05
Date Analyzed:	10-18-05
Matrix:	Water
Units:	mg/L (ppm)
Client ID:	**CF3-101705**
Lab ID:	10-122-02
Diesel Range:	**ND**
PQL:	0.25
Identification:	---
Lube Oil Range:	**ND**
PQL:	0.40
Identification:	---
Surrogate Recovery	
o-Terphenyl:	97%
Flags:	Y

2/20/06

This report pertains to the samples analyzed in accordance with the chain of custody and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: October 19, 2005
Samples Submitted: October 18, 2005
Laboratory Reference: 0510-122
Project: 033-1335-004

VOLATILES by EPA 8260B
Page 1 of 2

Date Extracted:	10-18-05
Date Analyzed:	10-18-05
Matrix:	Water
Units:	ug/L (ppb)
Lab ID:	10-122-01
Client ID:	**EX-1-GW-101705**

Compound	Results	Flags	PQL
Dichlorodifluoromethane	ND		0.20
Chloromethane	ND		0.20
Vinyl Chloride	ND		0.20
Bromomethane	ND		0.20
Chloroethane	ND		0.20
Trichlorofluoromethane	ND		0.20
1,1-Dichloroethene	ND		0.20
Acetone	ND		5.0
Iodomethane	ND		1.0
Carbon Disulfide	ND		0.20
Methylene Chloride	ND		1.0
(trans) 1,2-Dichloroethene	ND		0.20
Methyl t-Butyl Ether	ND		0.20
1,1-Dichloroethane	ND		0.20
Vinyl Acetate	ND		1.0
2,2-Dichloropropane	ND		0.20
(cis) 1,2-Dichloroethene	ND		0.20
2-Butanone	ND		5.0
Bromochloromethane	ND		0.20
Chloroform	0.68		0.20
1,1,1-Trichloroethane	ND		0.20
Carbon Tetrachloride	ND		0.20
1,1-Dichloropropene	ND		0.20
Benzene	ND		0.20
1,2-Dichloroethane	ND		0.20
Trichloroethene	ND		0.20
1,2-Dichloropropane	ND		0.20
Dibromomethane	ND		0.20
Bromodichloromethane	0.67		0.20
2-Chloroethyl Vinyl Ether	ND		1.0
(cis) 1,3-Dichloropropene	ND		0.20
Methyl Isobutyl Ketone	ND		2.0
Toluene	ND		0.20
(trans) 1,3-Dichloropropene	ND		0.20

2/20/06

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: October 19, 2005
Samples Submitted: October 18, 2005
Laboratory Reference: 0510-122
Project: 033-1335-004

VOLATILES by EPA 8260B
Page 2 of 2

Lab ID: 10-122-01
Client ID: EX-1-GW-101705

Compound	Results	Flags	PQL
1,1,2-Trichloroethane	ND		0.20
Tetrachloroethene	ND		0.20
1,3-Dichloropropane	ND		0.20
2-Hexanone	ND		2.0
Dibromochloromethane	0.24		0.20
1,2-Dibromoethane	ND		0.20
Chlorobenzene	ND		0.20
1,1,1,2-Tetrachloroethane	ND		0.20
Ethylbenzene	ND		0.20
m,p-Xylene	ND		0.40
o-Xylene	ND		0.20
Styrene	ND		0.20
Bromoform	ND		1.0
Isopropylbenzene	ND		0.20
Bromobenzene	ND		0.20
1,1,2,2-Tetrachloroethane	ND		0.20
1,2,3-Trichloropropane	ND		0.20
n-Propylbenzene	ND		0.20
2-Chlorotoluene	ND		0.20
4-Chlorotoluene	ND		0.20
1,3,5-Trimethylbenzene	ND		0.20
tert-Butylbenzene	ND		0.20
1,2,4-Trimethylbenzene	ND		0.20
sec-Butylbenzene	ND		0.20
1,3-Dichlorobenzene	ND		0.20
p-Isopropyltoluene	ND		0.20
1,4-Dichlorobenzene	ND		0.20
1,2-Dichlorobenzene	ND		0.20
n-Butylbenzene	ND		0.20
1,2-Dibromo-3-chloropropane	ND		1.0
1,2,4-Trichlorobenzene	ND		0.20
Hexachlorobutadiene	ND		0.20
Naphthalene	ND		1.0
1,2,3-Trichlorobenzene	ND		0.20

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	101	70-123
Toluene, d8	105	70-119
4-Bromofluorobenzene	112	70-119

2/20/06

This report pertains to the samples analyzed in accordance with the chain of custody and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: October 19, 2005
Samples Submitted: October 18, 2005
Laboratory Reference: 0510-122
Project: 033-1335-004

TOTAL ARSENIC
EPA 200.8

Date Extracted:	10-18-05
Date Analyzed:	10-18-05
Matrix:	Water
Units:	ug/L (ppb)

Client ID	Lab ID	Result	PQL
CF3-101705	10-122-02	**20**	3.3

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: October 31, 2005
Samples Submitted: October 19, 2005
Laboratory Reference: 0510-151
Project: 033-1335-004

NWTPH-Gx

Date Extracted: 10-20-05
Date Analyzed: 10-20-05

Matrix: Water
Units: ug/L (ppb)

Client ID:	**MW-17**			**MW-18**		
Lab ID:	10-151-01			10-151-02		
	Result	Flags	PQL	**Result**	Flags	PQL
TPH-Gas	**ND**		100	**ND**		100
Surrogate Recovery:						
Fluorobenzene	95%			93%		

2/20/06

This report pertains to the samples analyzed in accordance with the chain of custody and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: October 31, 2005
Samples Submitted: October 19, 2005
Laboratory Reference: 0510-151
Project: 033-1335-004

NWTPH-Dx

Date Extracted:	10-24-05
Date Analyzed:	10-25-05
Matrix:	Water
Units:	mg/L (ppm)

Client ID:	**MW-17**	**MW-18**
Lab ID:	10-151-01	10-151-02
Diesel Range:	**ND**	**ND**
PQL:	0.26	0.25
Identification:	---	---
Lube Oil Range:	**ND**	**ND**
PQL:	0.41	0.41
Identification:	---	---
Surrogate Recovery		
o-Terphenyl:	107%	103%
Flags:	Y	Y

2/20/06

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Date of Report: October 31, 2005
Samples Submitted: October 19, 2005
Laboratory Reference: 0510-151
Project: 033-1335-004

VOLATILES by EPA 8260B
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Date Extracted:	10-20-05
Date Analyzed:	10-20-05
Matrix:	Water
Units:	ug/L (ppb)
Lab ID:	10-151-01
Client ID:	**MW-17**

Compound	Results	Flags	PQL
Dichlorodifluoromethane	ND		0.20
Chloromethane	ND		0.20
Vinyl Chloride	ND		0.20
Bromomethane	ND		0.20
Chloroethane	ND		0.20
Trichlorofluoromethane	ND		0.20
1,1-Dichloroethene	ND		0.20
Acetone	ND		5.0
Iodomethane	ND		1.0
Carbon Disulfide	ND		0.20
Methylene Chloride	ND		1.0
(trans) 1,2-Dichloroethene	ND		0.20
Methyl t-Butyl Ether	0.39		0.20
1,1-Dichloroethane	ND		0.20
Vinyl Acetate	ND		1.0
2,2-Dichloropropane	ND		0.20
(cis) 1,2-Dichloroethene	ND		0.20
2-Butanone	ND		5.0
Bromochloromethane	ND		0.20
Chloroform	0.41		0.20
1,1,1-Trichloroethane	ND		0.20
Carbon Tetrachloride	ND		0.20
1,1-Dichloropropene	ND		0.20
Benzene	ND		0.20
1,2-Dichloroethane	ND		0.20
Trichloroethene	ND		0.20
1,2-Dichloropropane	ND		0.20
Dibromomethane	ND		0.20
Bromodichloromethane	ND		0.20
2-Chloroethyl Vinyl Ether	ND		1.0
(cis) 1,3-Dichloropropene	ND		0.20
Methyl Isobutyl Ketone	ND		2.0
Toluene	ND		0.20
(trans) 1,3-Dichloropropene	ND		0.20

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: October 31, 2005
Samples Submitted: October 19, 2005
Laboratory Reference: 0510-151
Project: 033-1335-004

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Lab ID: 10-151-01
Client ID: MW-17

Compound	Results	Flags	PQL
1,1,2-Trichloroethane	ND		0.20
Tetrachloroethene	ND		0.20
1,3-Dichloropropane	ND		0.20
2-Hexanone	ND		2.0
Dibromochloromethane	ND		0.20
1,2-Dibromoethane	ND		0.20
Chlorobenzene	ND		0.20
1,1,1,2-Tetrachloroethane	ND		0.20
Ethylbenzene	ND		0.20
m,p-Xylene	ND		0.40
o-Xylene	ND		0.20
Styrene	ND		0.20
Bromoform	ND		1.0
Isopropylbenzene	ND		0.20
Bromobenzene	ND		0.20
1,1,2,2-Tetrachloroethane	ND		0.20
1,2,3-Trichloropropane	ND		0.20
n-Propylbenzene	ND		0.20
2-Chlorotoluene	ND		0.20
4-Chlorotoluene	ND		0.20
1,3,5-Trimethylbenzene	ND		0.20
tert-Butylbenzene	ND		0.20
1,2,4-Trimethylbenzene	ND		0.20
sec-Butylbenzene	ND		0.20
1,3-Dichlorobenzene	ND		0.20
p-Isopropyltoluene	ND		0.20
1,4-Dichlorobenzene	ND		0.20
1,2-Dichlorobenzene	ND		0.20
n-Butylbenzene	ND		0.20
1,2-Dibromo-3-chloropropane	ND		1.0
1,2,4-Trichlorobenzene	ND		0.20
Hexachlorobutadiene	ND		0.20
Naphthalene	ND		1.0
1,2,3-Trichlorobenzene	ND		0.20

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	99	70-123
Toluene, d8	98	70-119
4-Bromofluorobenzene	101	70-119

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Date of Report: October 31, 2005
Samples Submitted: October 19, 2005
Laboratory Reference: 0510-151
Project: 033-1335-004

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Date Extracted:	10-20-05
Date Analyzed:	10-20-05
Matrix:	Water
Units:	ug/L (ppb)
Lab ID:	10-151-02
Client ID:	**MW-18**

Compound	Results	Flags	PQL
Dichlorodifluoromethane	ND		0.20
Chloromethane	ND		0.20
Vinyl Chloride	ND		0.20
Bromomethane	ND		0.20
Chloroethane	ND		0.20
Trichlorofluoromethane	ND		0.20
1,1-Dichloroethene	ND		0.20
Acetone	ND		5.0
Iodomethane	ND		1.0
Carbon Disulfide	ND		0.20
Methylene Chloride	ND		1.0
(trans) 1,2-Dichloroethene	ND		0.20
Methyl t-Butyl Ether	0.21		0.20
1,1-Dichloroethane	ND		0.20
Vinyl Acetate	ND		1.0
2,2-Dichloropropane	ND		0.20
(cis) 1,2-Dichloroethene	ND		0.20
2-Butanone	ND		5.0
Bromochloromethane	ND		0.20
Chloroform	ND		0.20
1,1,1-Trichloroethane	ND		0.20
Carbon Tetrachloride	ND		0.20
1,1-Dichloropropene	ND		0.20
Benzene	ND		0.20
1,2-Dichloroethane	ND		0.20
Trichloroethene	ND		0.20
1,2-Dichloropropane	ND		0.20
Dibromomethane	ND		0.20
Bromodichloromethane	ND		0.20
2-Chloroethyl Vinyl Ether	ND		1.0
(cis) 1,3-Dichloropropene	ND		0.20
Methyl Isobutyl Ketone	ND		2.0
Toluene	ND		0.20
(trans) 1,3-Dichloropropene	ND		0.20

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Date of Report: October 31, 2005
Samples Submitted: October 19, 2005
Laboratory Reference: 0510-151
Project: 033-1335-004

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Lab ID: 10-151-02
Client ID: MW-18

Compound	Results	Flags	PQL
1,1,2-Trichloroethane	ND		0.20
Tetrachloroethene	ND		0.20
1,3-Dichloropropane	ND		0.20
2-Hexanone	ND		2.0
Dibromochloromethane	ND		0.20
1,2-Dibromoethane	ND		0.20
Chlorobenzene	ND		0.20
1,1,1,2-Tetrachloroethane	ND		0.20
Ethylbenzene	ND		0.20
m,p-Xylene	ND		0.40
o-Xylene	ND		0.20
Styrene	ND		0.20
Bromoform	ND		1.0
Isopropylbenzene	ND		0.20
Bromobenzene	ND		0.20
1,1,2,2-Tetrachloroethane	ND		0.20
1,2,3-Trichloropropane	ND		0.20
n-Propylbenzene	ND		0.20
2-Chlorotoluene	ND		0.20
4-Chlorotoluene	ND		0.20
1,3,5-Trimethylbenzene	ND		0.20
tert-Butylbenzene	ND		0.20
1,2,4-Trimethylbenzene	ND		0.20
sec-Butylbenzene	ND		0.20
1,3-Dichlorobenzene	ND		0.20
p-Isopropyltoluene	ND		0.20
1,4-Dichlorobenzene	ND		0.20
1,2-Dichlorobenzene	ND		0.20
n-Butylbenzene	ND		0.20
1,2-Dibromo-3-chloropropane	ND		1.0
1,2,4-Trichlorobenzene	ND		0.20
Hexachlorobutadiene	ND		0.20
Naphthalene	ND		1.0
1,2,3-Trichlorobenzene	ND		0.20

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	101	70-123
Toluene, d8	100	70-119
4-Bromofluorobenzene	109	70-119

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Date of Report: October 31, 2005
Samples Submitted: October 19, 2005
Laboratory Reference: 0510-151
Project: 033-1335-004

VOLATILES by EPA 8260B
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Date Extracted:	10-20-05
Date Analyzed:	10-20-05
Matrix:	Water
Units:	ug/L (ppb)
Lab ID:	10-151-03
Client ID:	**Trip Blank**

Compound	Results	Flags	PQL
Dichlorodifluoromethane	ND		0.20
Chloromethane	ND		0.20
Vinyl Chloride	ND		0.20
Bromomethane	ND		0.20
Chloroethane	ND		0.20
Trichlorofluoromethane	ND		0.20
1,1-Dichloroethene	ND		0.20
Acetone	ND		5.0
Iodomethane	ND		1.0
Carbon Disulfide	ND		0.20
Methylene Chloride	ND		1.0
(trans) 1,2-Dichloroethene	ND		0.20
Methyl t-Butyl Ether	ND		0.20
1,1-Dichloroethane	ND		0.20
Vinyl Acetate	ND		1.0
2,2-Dichloropropane	ND		0.20
(cis) 1,2-Dichloroethene	ND		0.20
2-Butanone	ND		5.0
Bromochloromethane	ND		0.20
Chloroform	ND		0.20
1,1,1-Trichloroethane	ND		0.20
Carbon Tetrachloride	ND		0.20
1,1-Dichloropropene	ND		0.20
Benzene	ND		0.20
1,2-Dichloroethane	ND		0.20
Trichloroethene	ND		0.20
1,2-Dichloropropane	ND		0.20
Dibromomethane	ND		0.20
Bromodichloromethane	ND		0.20
2-Chloroethyl Vinyl Ether	ND		1.0
(cis) 1,3-Dichloropropene	ND		0.20
Methyl Isobutyl Ketone	ND		2.0
Toluene	ND		0.20
(trans) 1,3-Dichloropropene	ND		0.20

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Date of Report: October 31, 2005
Samples Submitted: October 19, 2005
Laboratory Reference: 0510-151
Project: 033-1335-004

VOLATILES by EPA 8260B
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Lab ID: 10-151-03
Client ID: Trip Blank

Compound	Results	Flags	PQL
1,1,2-Trichloroethane	ND		0.20
Tetrachloroethene	ND		0.20
1,3-Dichloropropane	ND		0.20
2-Hexanone	ND		2.0
Dibromochloromethane	ND		0.20
1,2-Dibromoethane	ND		0.20
Chlorobenzene	ND		0.20
1,1,1,2-Tetrachloroethane	ND		0.20
Ethylbenzene	ND		0.20
m,p-Xylene	ND		0.40
o-Xylene	ND		0.20
Styrene	ND		0.20
Bromoform	ND		1.0
Isopropylbenzene	ND		0.20
Bromobenzene	ND		0.20
1,1,2,2-Tetrachloroethane	ND		0.20
1,2,3-Trichloropropane	ND		0.20
n-Propylbenzene	ND		0.20
2-Chlorotoluene	ND		0.20
4-Chlorotoluene	ND		0.20
1,3,5-Trimethylbenzene	ND		0.20
tert-Butylbenzene	ND		0.20
1,2,4-Trimethylbenzene	ND		0.20
sec-Butylbenzene	ND		0.20
1,3-Dichlorobenzene	ND		0.20
p-Isopropyltoluene	ND		0.20
1,4-Dichlorobenzene	ND		0.20
1,2-Dichlorobenzene	ND		0.20
n-Butylbenzene	ND		0.20
1,2-Dibromo-3-chloropropane	ND		1.0
1,2,4-Trichlorobenzene	ND		0.20
Hexachlorobutadiene	ND		0.20
Naphthalene	ND		1.0
1,2,3-Trichlorobenzene	ND		0.20

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	103	70-123
Toluene, d8	101	70-119
4-Bromofluorobenzene	103	70-119

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Date of Report: September 27, 2005
Samples Submitted: September 27, 2005
Laboratory Reference: 0509-184
Project: 003-1335-002

NWTPH-Gx/BTEX

Date Extracted: 9-23-05
Date Analyzed: 9-23-05

Matrix: Soil
Units: mg/kg (ppm)

Client ID:	**EX-1-0922-A5**			**EX-1-0922-B2**		
Lab ID:	09-184-01			09-184-02		
	Result	Flags	PQL	**Result**	Flags	PQL
Benzene	**ND**		0.020	**ND**		0.020
Toluene	**ND**		0.056	**ND**		0.053
Ethyl Benzene	**ND**		0.056	**ND**		0.053
m,p-Xylene	**ND**		0.056	**ND**		0.053
o-Xylene	**ND**		0.056	**ND**		0.053
TPH-Gas	**ND**		5.6	**ND**		5.3
Surrogate Recovery:						
Fluorobenzene	84%			86%		

2/20/06

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: September 27, 2005
Samples Submitted: September 27, 2005
Laboratory Reference: 0509-184
Project: 003-1335-002

NWTPH-Gx/BTEX

Date Extracted: 9-23-05
Date Analyzed: 9-23-05

Matrix: Soil
Units: mg/kg (ppm)

Client ID: **EX-1-0922-C7**
Lab ID: 09-184-03

	Result	Flags	PQL
Benzene	**ND**		0.020
Toluene	**ND**		0.055
Ethyl Benzene	**ND**		0.055
m,p-Xylene	**ND**		0.055
o-Xylene	**ND**		0.055
TPH-Gas	**ND**		5.5
Surrogate Recovery:			
Fluorobenzene	83%		

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

2/20/06

Date of Report: September 27, 2005
Samples Submitted: September 27, 2005
Laboratory Reference: 0509-184
Project: 003-1335-002

NWTPH-Dx

Date Extracted: 9-23-05
Date Analyzed: 9-23-05

Matrix: Soil
Units: mg/kg (ppm)

Client ID:	**EX-1-0922-A5**	**EX-1-0922-B2**	**EX-1-0922-C7**
Lab ID:	09-184-01	09-184-02	09-184-03
Diesel Range:	**ND**	**ND**	**ND**
PQL:	33	31	33
Identification:	---	---	---
Lube Oil Range:	**ND**	**ND**	**ND**
PQL:	67	61	66
Identification:	---	---	---
Surrogate Recovery			
o-Terphenyl:	101%	98%	93%
Flags:	Y	Y	Y

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: September 27, 2005
Samples Submitted: September 27, 2005
Laboratory Reference: 0509-184
Project: 003-1335-002

% MOISTURE

Date Analyzed: 9-26-05

Client ID	Lab ID	% Moisture
EX-1-0922-A5	09-184-01	25
EX-1-0922-B2	09-184-02	18
EX-1-0922-C7	09-184-03	24

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

APPENDIX D

PHOTOGRAPHIC DOCUMENTATION

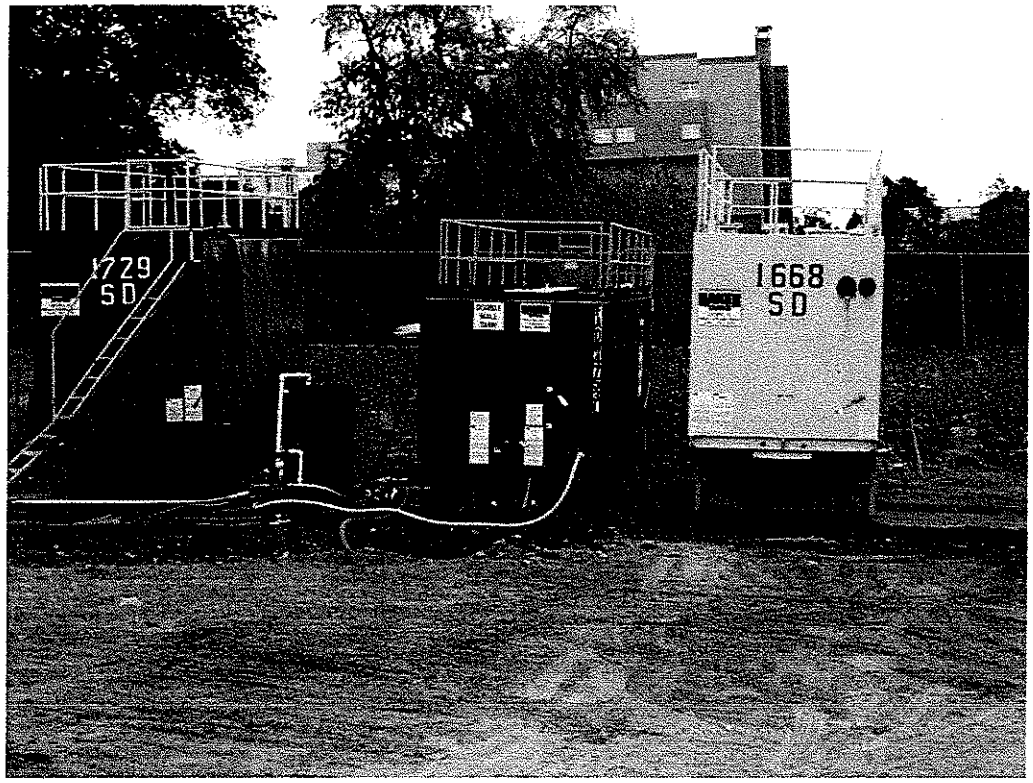


Photo 1. Water treatment system; storage tanks and granulated activated carbon filter canister.

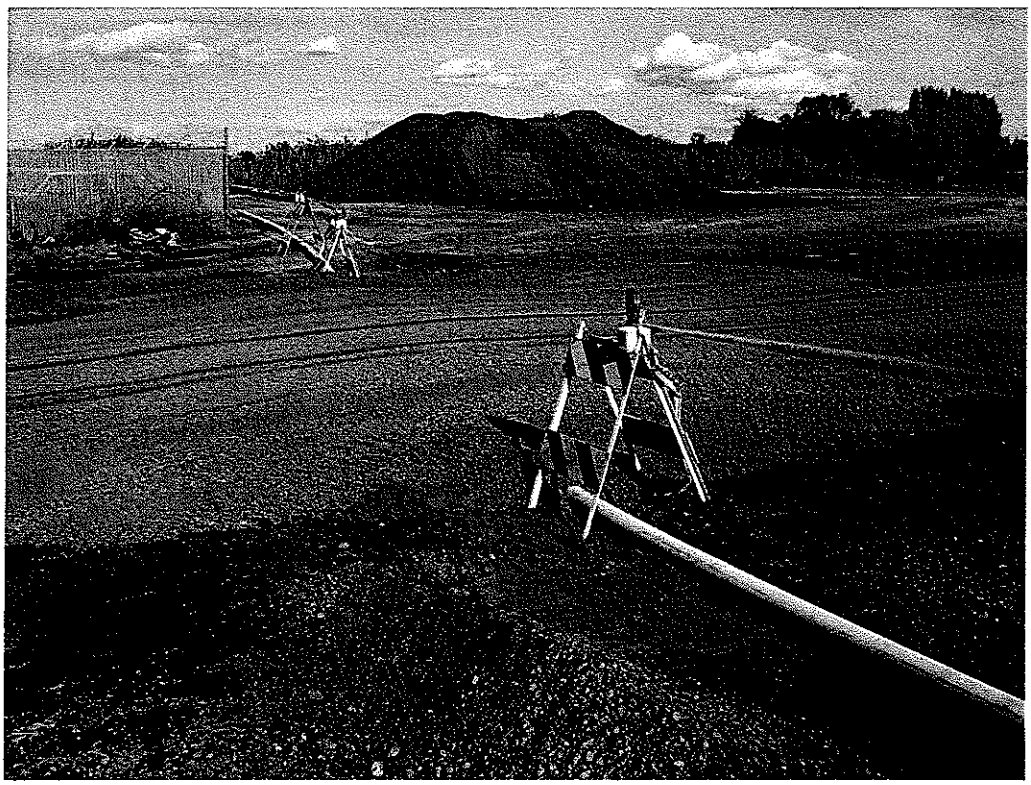


Photo 2. Discharge pipe from water treatment system, passing north under Penn Street toward the wetland.

SITE PHOTOGRAPHS
MOSES LAKE/MAINTENANCE CLEAN-UP/WA

Photo 3. Discharge of treated water to the wetland from perforated pipe.

Photo 4. Loading city stockpile material for use as backfill.

SITE PHOTOGRAPHS
MOSES LAKE/MAINTENANCE CLEAN-UP/WA

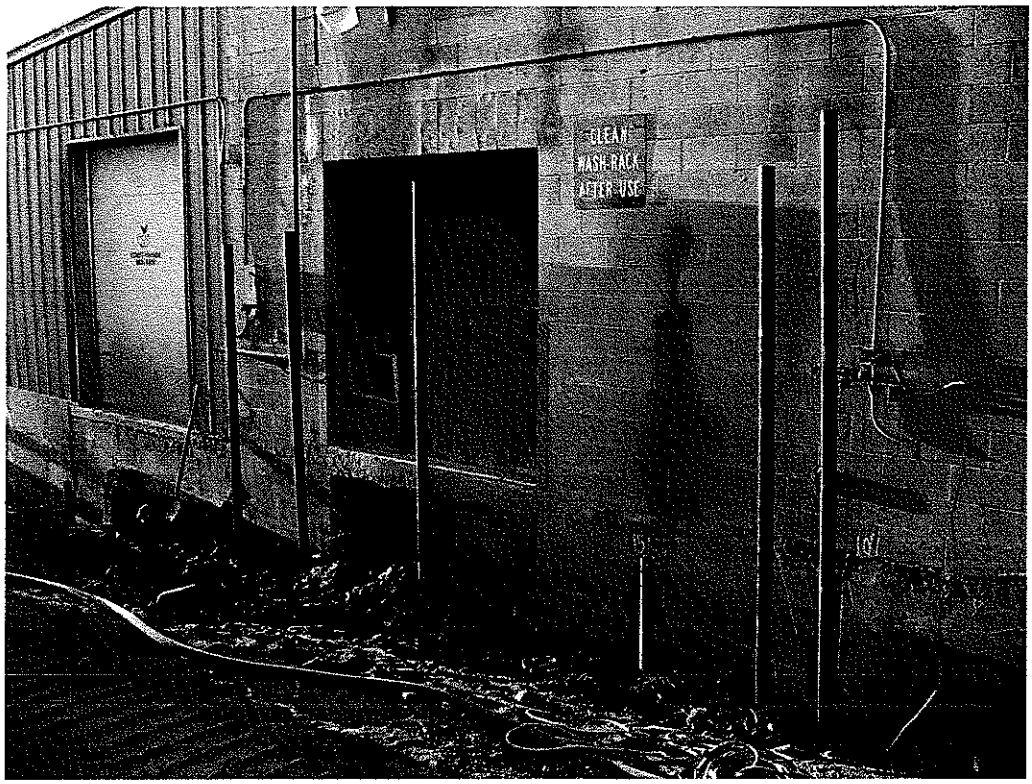


Photo 5 Underpinning piles at Area 1 after driving.

Photo 6. Seepage of contamination from beneath the maintenance shop in Area 1. This area corresponds to one of the stub-outs of the interceptor drain.

SITE PHOTOGRAPHS
MOSES LAKE/MAINTENANCE CLEAN-UP/WA

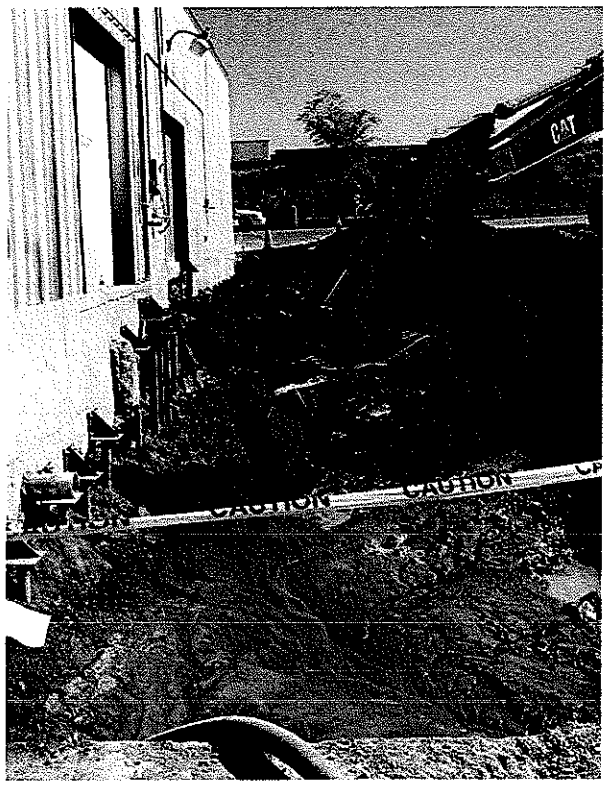


Photo 7. Excavation at Area 1 Underpinning piles have been attached to the building foundation.

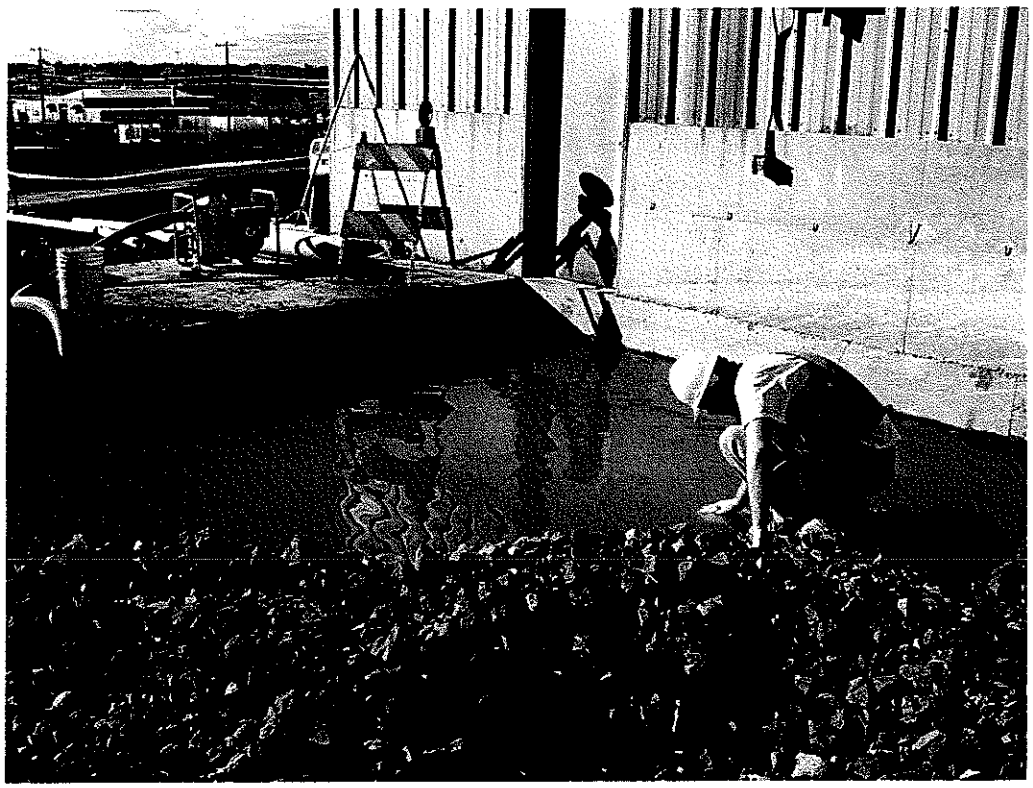


Photo 8. Collection of water sample from excavation at Area 1.

SITE PHOTOGRAPHS
MOSES LAKE/MAINTENANCE CLEAN-UP/WA

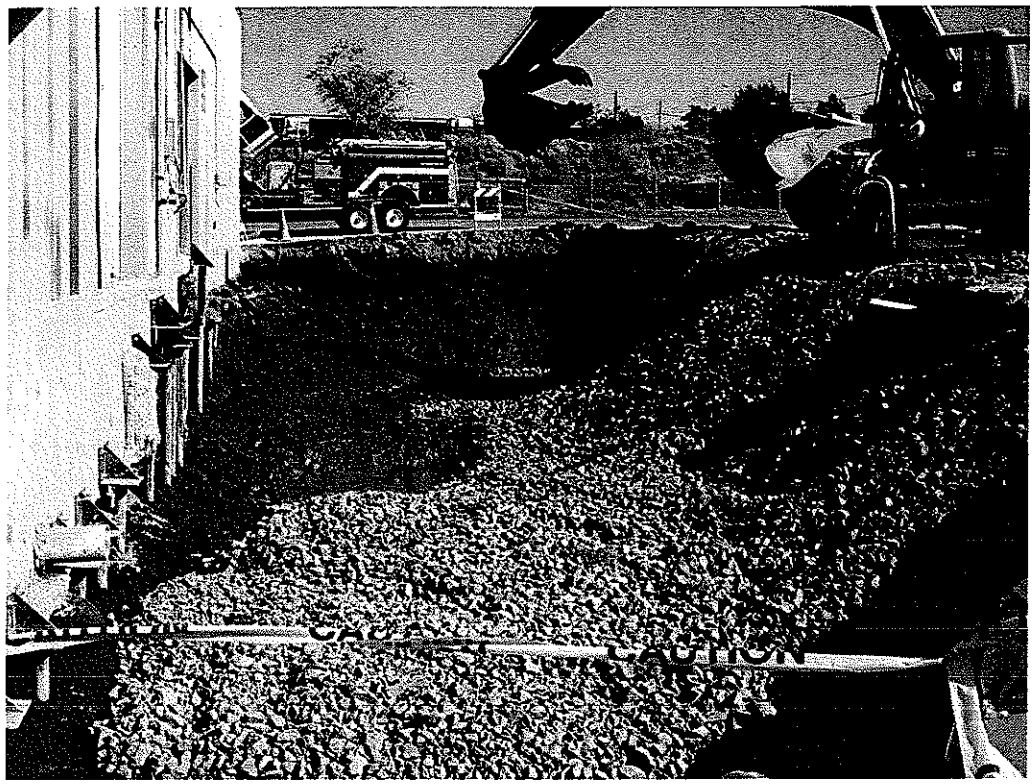


Photo 9. Backfill of the lower part of excavation at Area 1 with quarry spalls.

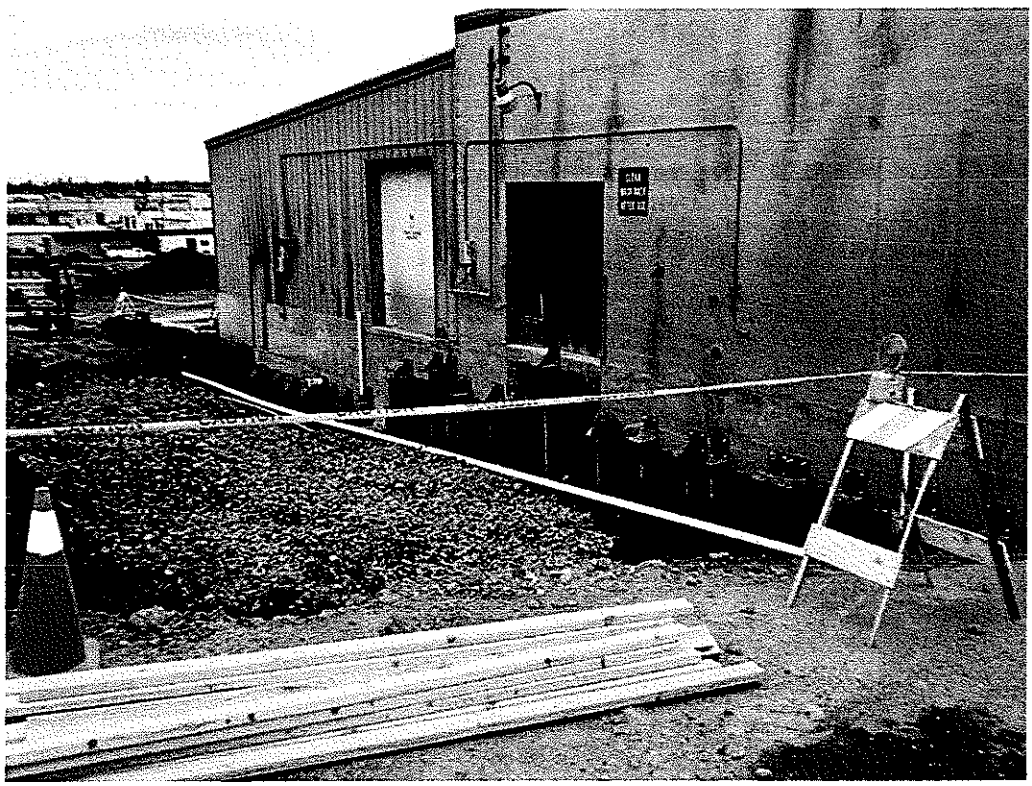


Photo 10. Interceptor drain and injection ports at Area 1 prior to further backfilling.

SITE PHOTOGRAPHS
MOSES LAKE/MAINTENANCE CLEAN-UP/WA

Photo 11. Backfilling beneath footing and around underpinning piles with controlled-density fill at Area 1.

Photo 12. Piping installed at Area 1. Foreground, accessway for valve on interceptor drain. Background, geotextile cover over drain rock where perforated groundwater drain had been installed.

SITE PHOTOGRAPHS
MOSES LAKE/MAINTENANCE CLEAN-UP/WA

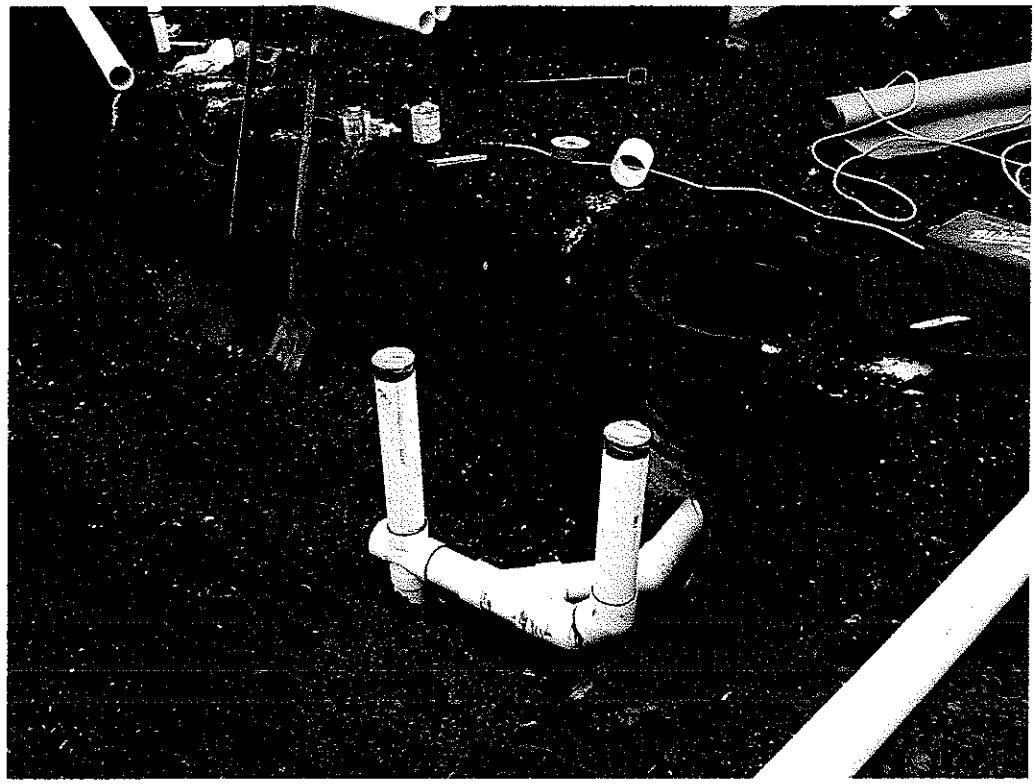


Photo 13. Accessways for interceptor drain at Area 1 from downstream (left): Sampling port, cleanout port, valve port.

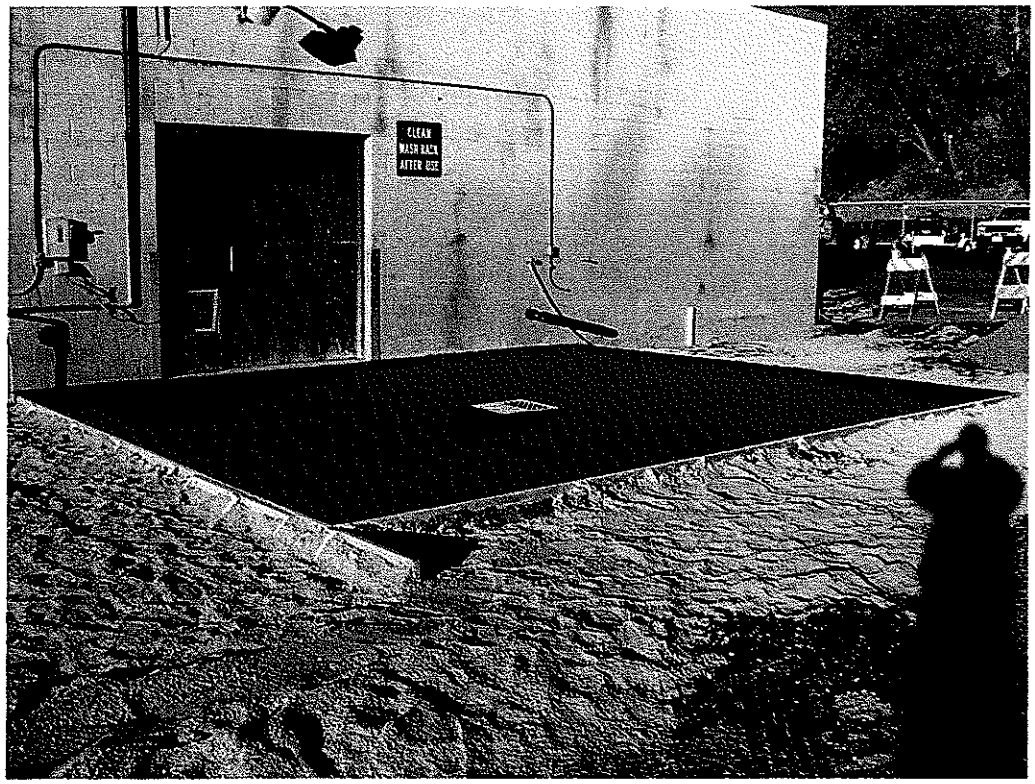


Photo 14. Replacement wash rack at Area 1.

SITE PHOTOGRAPHS
MOSES LAKE/MAINTENANCE CLEAN-UP/WA

Photo 15. Excavation in Area 2.

Photo 16. View of pocket of contamination in Area 2.

SITE PHOTOGRAPHS
MOSES LAKE/MAINTENANCE CLEAN-UP/WA

Photo 17. Spreading of imported backfill over geotextile in Area 2.

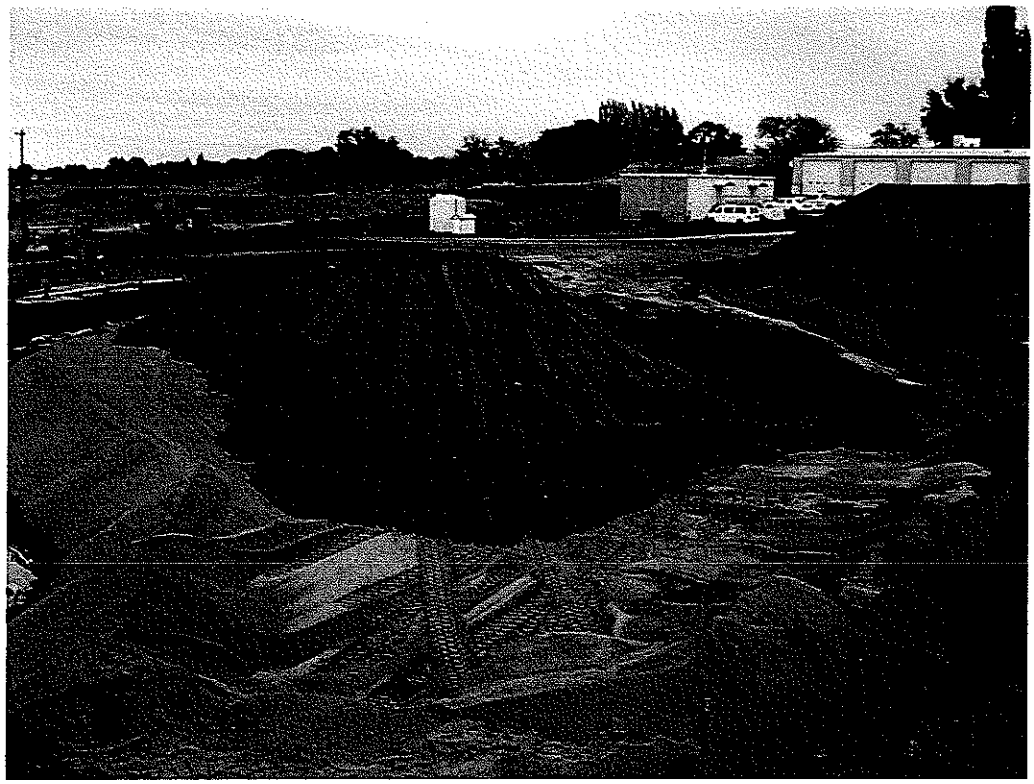


Photo 18. Backfilled portion of Area 2 showing imported fill on the bottom and city stockpile fill on top.

SITE PHOTOGRAPHS
MOSES LAKE/MAINTENANCE CLEAN-UP/WA

Photo 19. Backfilling of excavation at Area 2.

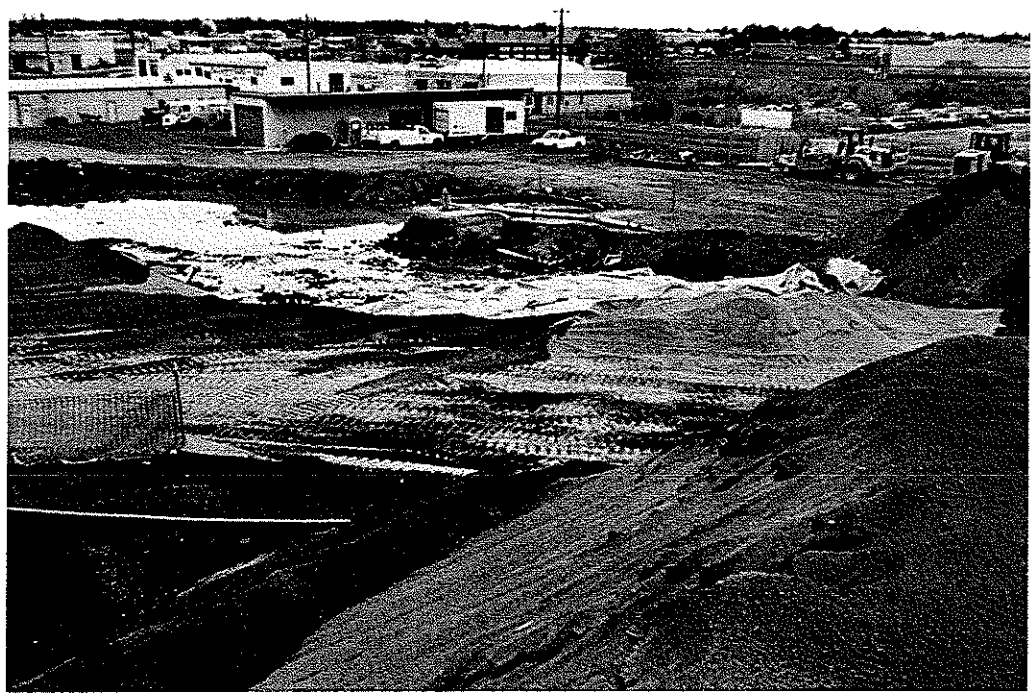


Photo 20. View of excavation at Area 2 facing northwest.

SITE PHOTOGRAPHS
MOSES LAKE/MAINTENANCE CLEAN-UP/WA

Photo 21. Pocket of contamination within large concrete debris, northwestern lobe of excavation in Area 2.

Photo 22. View of northwestern lobe of excavation in Area 2 showing frozen conditions.

SITE PHOTOGRAPHS
MOSES LAKE/MAINTENANCE CLEAN-UP/WA

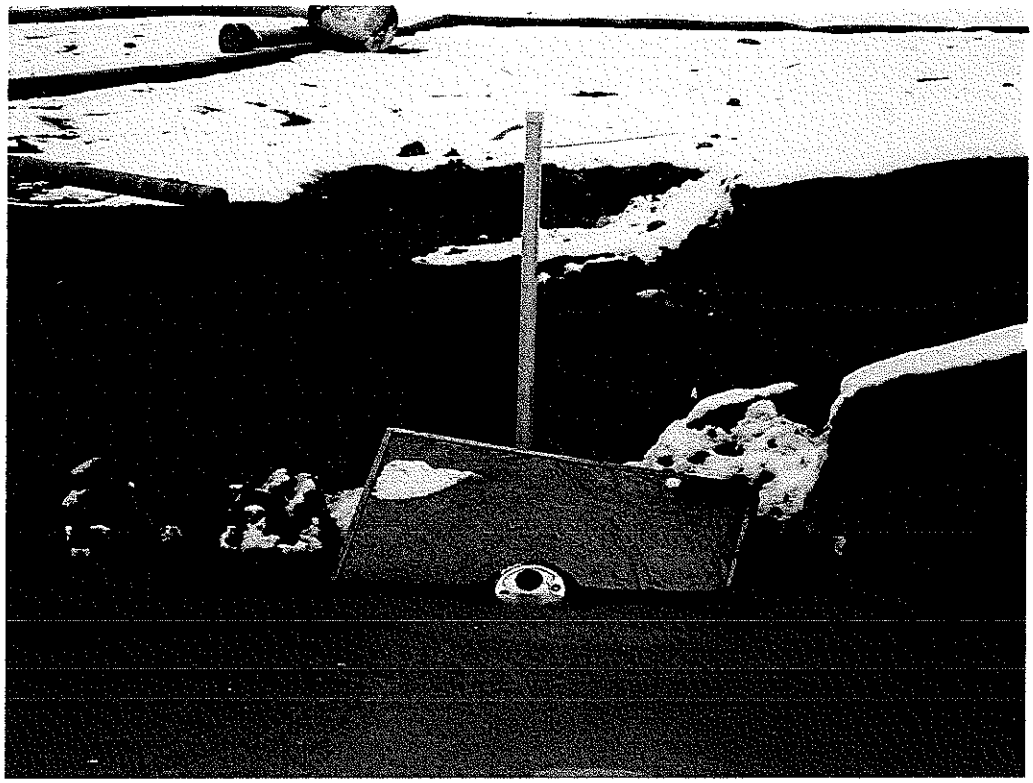


Photo 23. Temporary repair of PVC blank monitoring well MW-18 (ultimately abandoned).

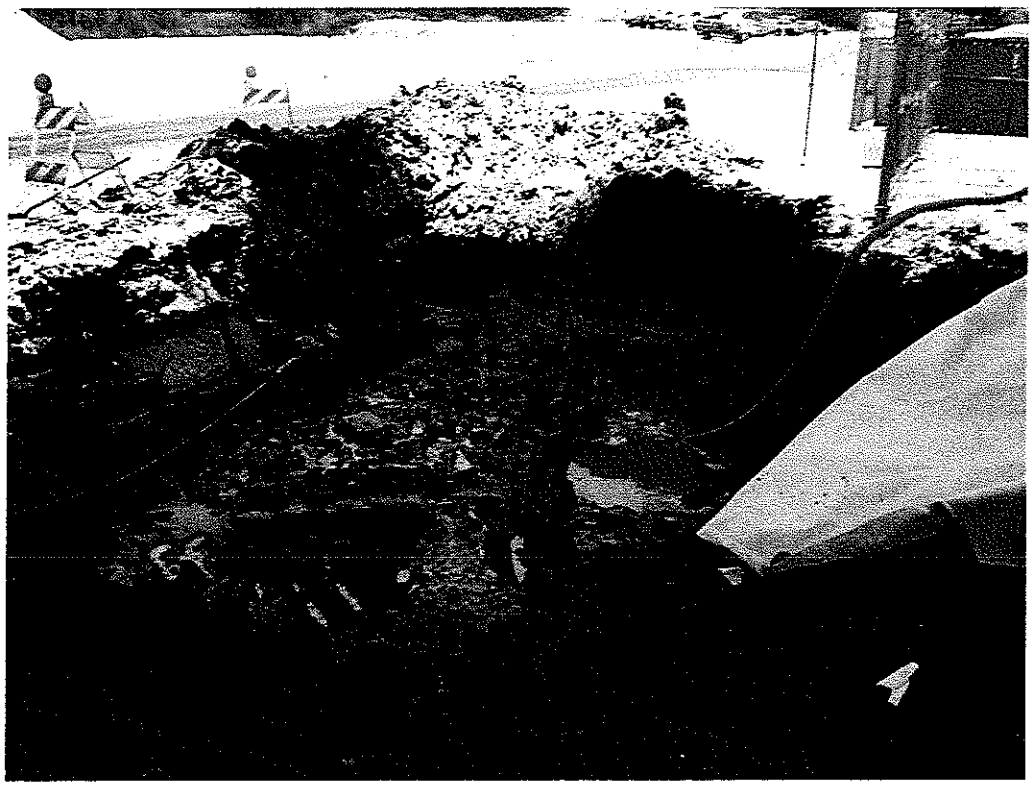


Photo 24. Excavation between the north fence and Penn Street. Repaired telephone line is visible at the left.

SITE PHOTOGRAPHS
MOSES LAKE/MAINTENANCE CLEAN-UP/WA

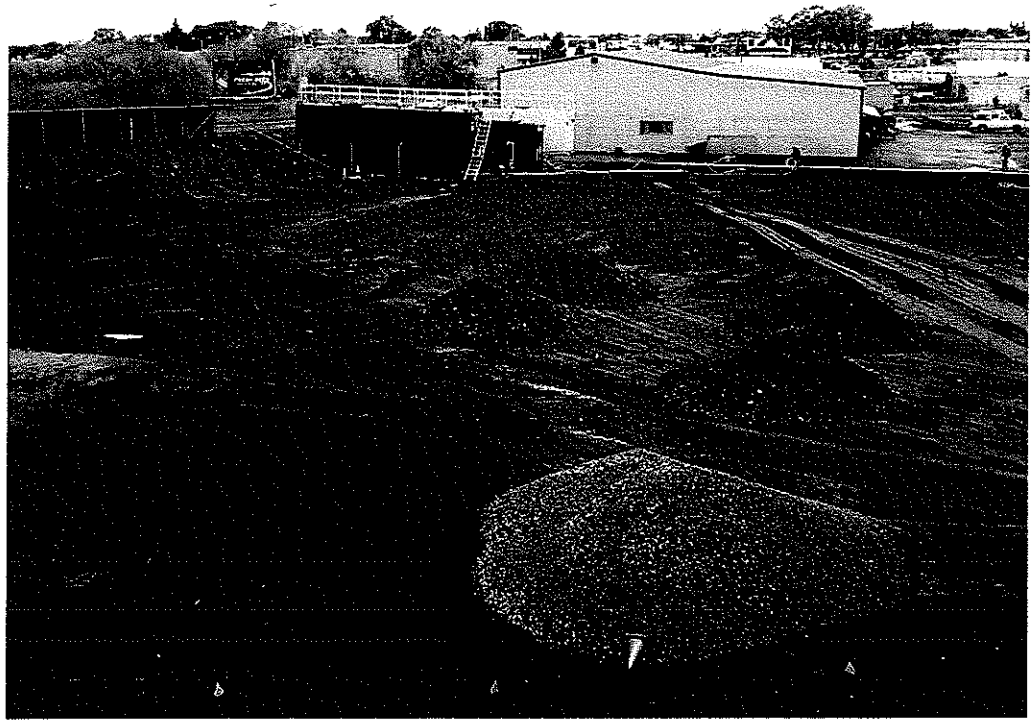


Photo 25. Excavation at Area 2 after backfilling, prior to placement of crushed surfacing.

Photo 26. Replaced perforated groundwater drains in Area 2.

SITE PHOTOGRAPHS
MOSES LAKE/MAINTENANCE CLEAN-UP/WA

COPY

For Ecology Use
(Date Stamp)

WASHINGTON STATE DEPARTMENT OF ECOLOGY

State of Washington

Application for a Water Right Permit

☐ **SURFACE WATER** ☐ **GROUND WATER**
☐ **Permanent** ☐ **Temporary** ☒ **Short Term**

Follow the attached instructions. Attach additional sheets as necessary.

A NON-REFUNDABLE **MINIMUM** FEE OF $50.00 PAYABLE TO THE DEPARTMENT OF ECOLOGY MUST ACCOMPANY THIS APPLICATION.

Section 1. APPLICANT

Applicant/Business Name: WA Dept of Ecology - Toxics Cleanup	Phone No: 509/329-3400	Other No:
Address: 4601 N. Monroe		
City: Spokane	State: WA	Zip:99205
Email Address (optional):		

Contact Name (if different from above): Zach Hedgpeth	Phone No: 509/329-3484	Other No:
Relationship to Applicant: employee - project manager		
Address:		
City:	State:	Zip:
Email Address (optional): zahe461@ecy.wa.gov		

Section 2. STATEMENT OF INTENT

Briefly describe the purpose of your proposed project: To provide temporary irrigation to native trees, shrubs, and grasses installed as part of a toxics cleanup project in the Spokane River.

Anticipated length of time to complete your project: 3 months

Water Use List all purposes for which water will be applied to a beneficial use and list quantity required for each.

Purpose(s) of Use	Rate (check one box only) ☐ Cubic Feet per Second (CFS) ☒ Gallons per Minute (GPM)	Acre-Feet per Year (AF/YR) (If known)	Period of Use (Continuously or Seasonal)
irrigation	3-4 (est.)	0.1-0.2 (est.)	seasonal
TOTAL:			

Short Term/Temporary Water Use

Is this a request for a short term project (less than four months and non-recurring)? ☒ YES ☐ NO

Is this request for a temporary permit? ☐ YES ☒ NO

If yes to either question above, indicate the dates that the water will be needed:

FROM: 08/01/2007 TO: 10/31/2007

For Ecology Use	APPLICATION NO:_____ SEPA: Exempt/Not Exempt Fee Paid:_____ Check No:_____ ECY Coding: 001-001-WR1-0285-000011
Date Returned _____ By_____ Priority Date _____ By_____ WRIA:_____	

Section 3. POINT OF DIVERSION OR WITHDRAWAL

Complete A or B, and C below

A.) If Surface Water Source	B.) If Ground Water Source
☐ Spring ☐ Creek ☐ River ☐ Lake ☐ Other:_____ Source Name:_____ Tributary to:_____ Number of proposed diversion points:_____ Do you have an existing diversion? ☐ YES ☐ NO	☒ Well(s) ☐ Other:_____ _____ Well diameter & depth:8-inch 165 ft depth Number of proposed points of withdrawal:1 Do you have an existing well? ☒ YES ☐ NO If available, attach Water Well Report and pump test. Well Tag ID No.Unk. Well log attached

C.) Point of Diversion/Withdrawal – Legal Description

Parcel No.	¼	¼	Section	Township	Range	County
None - WSDOT I-90 land	NE	NE	01	25	45	Spokane

Lot(s)	Block(s)	Subdivision	

If known, enter the distances in feet from the point of diversion or withdrawal to the nearest section corner:

_____ Feet (☐ North/☐ South) and _____feet (☐ East/☐ West)

from the (☐NW ☐SW ☐NE ☐SE ☐ ____) corner of Section_____.

Parcel No.	¼	¼	Section	Township	Range	County

Lot(s)	Block(s)	Subdivision	

If known, enter the distances in feet from the point of diversion or withdrawal to the nearest section corner:

_____feet (☐ North/☐ South) and _____feet (☐ East/☐ West)

from the (☐NW ☐SW ☐NE ☐SE ☐____) corner of Section_____

NOTE: If more than two points of diversion/withdrawal attach additional information on a separate sheet of paper.

Do you own the land on which the proposed point of diversion/withdrawal is located? ☐ YES ☒ NO
If no, do you have legal authority to make this application for use of another's land? ☒ YES ☐ NO
Provide the owner name(s), address, and phone number:Washington Dept. of Transportation, 12223 North Division St. Spokane, WA 99218, (509) 324-6276 - Contact is Dick Birr. Negotiations to secure written permission are underway with WSDOT and Spokane County Parks who is leasing the land and well from WSDOT.

Section 4. PLACE OF USE

Attach a copy of the legal description of the property (on which the water will be used) taken from a real estate contract, property deed or title insurance policy, or copy it carefully in the space below.

None available. Place of use of a bank of a seasonal island within the Spokane River on land owned by the State of Washington and managed by the Dept. of Natural Resources.

¼	¼	Section	Twp.	Range	County	Parcel No.
NW	SW	01	25	45	Spokane	None. Spokane River

Do you own all the lands on which the proposed place of use is located? ☐ YES ☒ NO.

If no, do you have legal authority to make this application for use of another's land? ☒ YES ☐ NO
Provide owner name(s), address, and phone number:Washington Dept. of Natural Resources, Aquatics Region/Rivers District P.O. Box 280 Castle Rock WA. 98611-0280, (360) 767-7003. Contact is Dave Harsh.

Are there any other water rights or claims associated with this property or water system? ☐ YES ☐ NO

If yes, provide the water right and/or claim numbers:Unknown.

Attach a map of your project showing the point of diversion/withdrawal and place of use. If platted property, be sure to include a complete copy of the plat map.

Section 5. WATER SYSTEM DESCRIPTION

Describe your proposed water system (include type and size of devices used to divert or withdraw water from source): The proposed system will tie into an existing 2-inch PVC irrigation supply line that is running west from the WSDOT well. Through a combination of shallow trenched and above ground pipe, the system will provide temporary irrigation to native plant installations in a seasonal island area of the Spokane River. The system is expected to consist of a 2-inch diameter supply line with small branch lines supplying drip irrigation equipment at the planting site. The system will include necessary valving and vaulting to enable isolation of the proposed system from the existing water system. The proposed system will be used intermittently during the summer months for 2-3 years to ensure establishment of the native plants. Ecology will ensure that the system is maintained as appropriate, including repairs and seasonal close down.

Section 6. DOMESTIC WATER SUPPLY SYSTEM INFORMATION

Complete A or B, and C below

A.) Domestic Water Systems only	**B.) Municipal Water Systems only** *(defined under RCW 90.03.015)*
Projected number of connections to be served: _____ Type of connections: _____ *(e.g., home, recreational cabin)*	Present population to be served water: _____ Estimate future population to be served: _____ (20 year projection)

C.) Water System Planning

Do you have a Water System Plan approved by the Washington State Department of Health, Drinking Water Division? ☐ YES ☐ NO

If yes, date plan was approved _____/_____/_____ Water System Number: _____

Name of water system: _____

Are you within the service area of an existing water system? ☐ YES ☐ NO

If yes, explain why you are unable to connect to the system: _____

Section 7. IRRIGATION/STOCKWATER/OTHER FARM USES

Irrigation

Total number of acres requested to be irrigated under this application = <1.0 ACRES

NOTE: Outline the area to be irrigated on your attached map.

Stockwater

List number and kind of stock: _____

Is the proposed project for a dairy farm? ☐ YES ☐ NO

Other Proposed Farm Uses

Describe all proposed uses: _____

Family Farm Water Act (RCW 90.66):

Calculate the acreage in which you have a controlling interest, including only:

- Acreage irrigated under water rights acquired after December 8, 1977,
- Acreage proposed to be irrigated under this application, and
- Acreage proposed to be irrigated under other pending application(s).

Is the combined acreage under existing rights greater than 6000 acres? ☐ YES ☐ NO

Do you have a controlling interest in a Family Farm Development Permit? ☐ YES ☐ NO

If yes, enter Permit No: _____

Section 8. OTHER WATER USES

Hydropower

Indicate total feet of head _____ and proposed capacity in kilowatts:_____

Describe works:_____

_____

_____

Indicate all uses to which power is to be applied:_____

FERC License No: _____

Mining/Industrial Use

Describe use, method of supplying and utilizing water:_____

_____

_____

Other Use

_____

_____

_____

_____

Section 9. WATER STORAGE

Will you be using a dam, dike, or other structure to retain or store water? ☐ YES ☒ NO

Are you proposing to store more than 10 acre-feet of water? ☐ YES ☐ NO

Will the water depth be 10 feet or more? ☐ YES ☐ NO

If you answered yes to any of the above questions, please describe:_____

_____

_____

NOTE: If you will be storing 10 acre-feet or more of water and/or if the water depth will be 10 feet or more at the deepest point and some portion of the storage will be above grade, you must also complete an Application for Permit to Construct a Reservoir and a Dam Construction Permit and Application.

Section 10. DRIVING DIRECTIONS

Provide detailed driving directions to the project site: From I-90 eastbound from Spokane, take the State Line exit (#299). From the exit ramp, turn left onto N. Spokane Bridge Road, proceed under the freeway and straight at the stop sign. At the hairpin turn, turn left onto East Appleway Lane proceed to the parking lot. The project source is the well located at the Spokane County visitors center. The project site is a bank of a seasonal island within the Spokane River located approximately 1 mile west along the Centennial Trail.

Site Address: None. Near 26700 East Spokane Bridge Road, Liberty Lake, WA 99019

Section 11. REQUIRED SIGNATURES

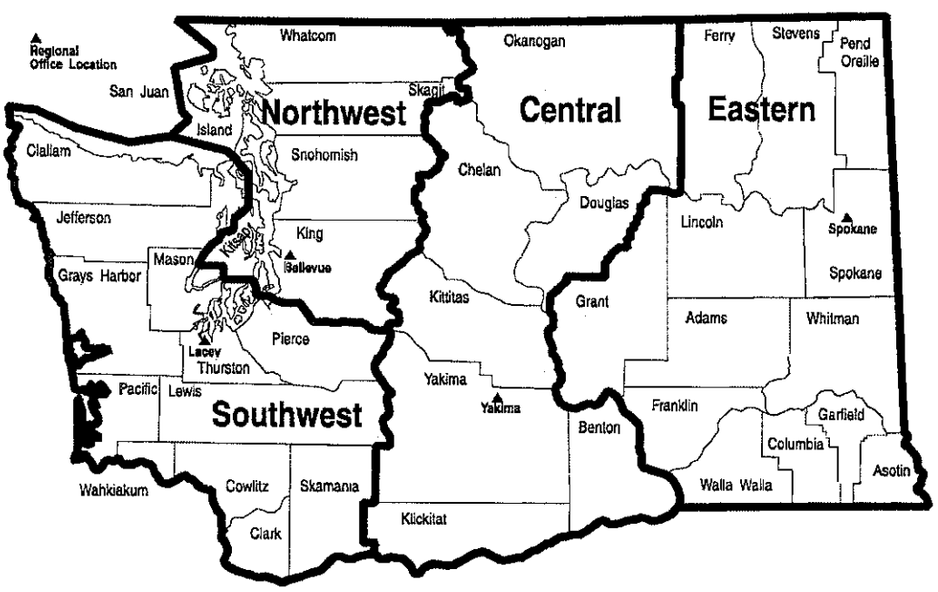
I certify that the information provided in this application is true and accurate to the best of my knowledge. I understand that in order to process my application, I grant staff from the Department of Ecology access to the site for inspection and monitoring purposes. Even though the employees of the Department of Ecology may have assisted me in the preparation of the above application, all responsibility for the accuracy of the information rests with me, the applicant.

Print Name (Applicant or authorized representative)	Signature	Date
FLORA GOLDSTEIN	Flora J. Goldstein	6.18.2007
Scott Robinson	Scott T. Robinson	13 June 2007

Submit your application to: DEPARTMENT OF ECOLOGY
CASHIERING SECTION
PO BOX 5128
LACEY WA 98509-5128

Please check the region in which your proposed project is located.
☐ Southwest ☐ Northwest ☐ Central ☐ Eastern

Below is a map of the State of Washington, with outlines of the four Ecology regional offices. If you have questions about your application, contact the Water Resources program at the regional office in which your project is located.



Southwest Regional Office: 360-407-6300

Northwest Regional Office: 425-649-7000

Central Regional Office: 509-575-2490

Eastern Regional Office: 509-329-3400

APPENDIX E

SOIL DISPOSAL

WASTE MANAGEMENT

GREATER WENATCHEE LANDFILL
PO BOX 2963
WENATCHEE WA 98807-2963

Customer: ANDERSON ENVIRONME...
Account Number: 740-0508083-10
Invoice Date: 10/01/
Invoice Number: 0012586-10
Due Date: N
WM ezPay Account ID: 00007-22539-

Service Location: 740-508083 Anderson Environmental, 406 Pine St, Kelso Wa 98626-2311

Date	Ticket	Description	Quantity	U/M
09/22/05	519976	Veh#:0		
		Petroleum contaminated soil	30.80	TON
		Environmental fee	1.00	LOA
		Ticket total		
09/22/05	519984	Veh#:01		
		Petroleum contaminated soil	27.42	TON
		Environmental fee	1.00	LOA
		Ticket total		
09/23/05	520014	Veh#:01		
		Petroleum contaminated soil	29.32	TON
		Environmental fee	1.00	LOA
		Ticket total		
09/23/05	520020	Veh#:02		
		Petroleum contaminated soil	33.00	TON
		Environmental fee	1.00	LOA
		Ticket total		
09/23/05	520051	Veh#:01		
		Petroleum contaminated soil	30.97	TON
		Environmental fee	1.00	LOA
		Ticket total		
09/23/05	520059	Veh#:01		
		Petroleum contaminated soil	29.32	TON
		Environmental fee	1.00	LOA
		Ticket total		
09/23/05	520084	Veh#:0		
		Petroleum contaminated soil	31.58	TON
		Environmental fee	1.00	LOA
		Ticket total		
09/23/05	520097	Veh#:01		
		Petroleum contaminated soil	29.79	TON
		Environmental fee	1.00	LOA
		Ticket total		
09/26/05	520166	Veh#:0		
		Petroleum contaminated soil	35.54	TON
		Environmental fee	1.00	LOA
		Ticket total		
09/26/05	520168	Veh#:t203		
		Petroleum contaminated soil	32.98	TON
		Environmental fee	1.00	LOA
		Ticket total		
09/26/05	520192	Veh#:5550		
		Petroleum contaminated soil	29.72	TON
		Environmental fee	1.00	LOA
		Ticket total		
09/26/05	520202	Veh#:21		
		Petroleum contaminated soil	32.63	TON
		Environmental fee	1.00	LOA
		Ticket total		
09/26/05	520208	Veh#:51		
		Petroleum contaminated soil	29.72	TON
		Environmental fee	1.00	LOA
		Ticket total		
09/26/05	520224	Veh#:5550		
		Petroleum contaminated soil	31.24	TON
		Environmental fee	1.00	LOA
		Ticket total		
09/27/05	520231	Veh#:0		
		Petroleum contaminated soil	31.89	TON

Service Location: 740 508083 Anderson Environmental, 406 Pine St Kelso Wa 98626-2311				
Date	Ticket	Description	Quantity	U/M
		Environmental fee	1.00	LOA
		Ticket total		
09/27/05	520232	Veh#:1		
		Petroleum contaminated soil	30.14	TON
		Environmental fee	1.00	LOA
		Ticket total		
09/27/05	520266	Veh#:21		
		Petroleum contaminated soil	31.18	TON
		Environmental fee	1.00	LOA
		Ticket total		
09/27/05	520270	Veh#:51		
		Petroleum contaminated soil	32.35	TON
		Environmental fee	1.00	LOA
		Ticket total		
09/27/05	520302	Veh#:21		
		Petroleum contaminated soil	33.27	TON
		Environmental fee	1.00	LOA
		Ticket total		
09/27/05	520304	Veh#:51		
		Petroleum contaminated soil	32.13	TON
		Environmental fee	1.00	LOA
		Ticket total		
09/28/05	520336	Veh#:01		
		Petroleum contaminated soil	32.04	TON
		Environmental fee	1.00	LOA
		Ticket total		
09/28/05	520337	Veh#:02		
		Petroleum contaminated soil	29.30	TON
		Environmental fee	1.00	LOA
		Ticket total		
09/28/05	520373	Veh#:0		
		Petroleum contaminated soil	27.28	TON
		Environmental fee	1.00	LOA
		Ticket total		
09/28/05	520377	Veh#:02		
		Petroleum contaminated soil	31.15	TON
		Environmental fee	1.00	LOA
		Ticket total		
09/28/05	520401	Veh#:01		
		Petroleum contaminated soil	32.72	TON
		Environmental fee	1.00	LOA
		Ticket total		
09/28/05	520405	Veh#:02		
		Petroleum contaminated soil	31.30	TON
		Environmental fee	1.00	LOA
		Ticket total		
09/29/05	520432	Veh#:01		
		Petroleum contaminated soil	33.39	TON
		Environmental fee	1.00	LOA
		Ticket total		
09/29/05	520433	Veh#:02		
		Petroleum contaminated soil	31.55	TON
		Environmental fee	1.00	LOA
		Ticket total		
09/29/05	520452	Veh#:02		
		Petroleum contaminated soil	31.74	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		

WASTE MANAGEMENT

GREATER WENATCHEE LANDFILL
PO BOX 2963
WENATCHEE, WA 98807-2963

Account Number:	740-0508083-1048-1
Invoice Date:	10/01/2005
Invoice Number:	0012586-1048-2
Due Date:	Net 30
WM ezPay Account ID:	00007-22539-15007

Service Location: 740-508083 Anderson Environmental: 406 Pine St. Kelso Wa 98626-2311

Date	Ticket	Description	Quantity	U/M	Ra
09/29/05	520460	Veh#:03			
		Petroleum contaminated soil	31.75	TON	
		Fuel surcharge landfill	1.00	PCT	
		Environmental fee	1.00	LOA	
		Ticket total			
09/29/05	520464	Veh#:02			
		Petroleum contaminated soil	32.68	TON	
		Fuel surcharge landfill	1.00	PCT	
		Environmental fee	1.00	LOA	
		Ticket total			
09/29/05	520481	Veh#:02			
		Petroleum contaminated soil	31.31	TON	
		Fuel surcharge landfill	1.00	PCT	
		Environmental fee	1.00	LOA	
		Ticket total			
09/29/05	520491	Veh#:0			
		Petroleum contaminated soil	29.08	TON	
		Environmental fee	1.00	LOA	
		Ticket total			
09/29/05	520492	Veh#:03			
		Petroleum contaminated soil	32.48	TON	
		Fuel surcharge landfill	1.00	PCT	
		Environmental fee	1.00	LOA	
		Ticket total			
09/29/05	520513	Veh#:01			
		Petroleum contaminated soil	31.28	TON	
		Fuel surcharge landfill	1.00	PCT	
		Environmental fee	1.00	LOA	
		Ticket total			
09/30/05	520531	Veh#:02			
		Petroleum contaminated soil	32.04	TON	
		Fuel surcharge landfill	1.00	PCT	
		Environmental fee	1.00	LOA	
		Ticket total			
09/30/05	520532	Veh#:03			
		Petroleum contaminated soil	31.14	TON	
		Fuel surcharge landfill	1.00	PCT	
		Environmental fee	1.00	LOA	
		Ticket total			
09/30/05	520533	Veh#:01			
		Petroleum contaminated soil	29.14	TON	
		Fuel surcharge landfill	1.00	PCT	
		Environmental fee	1.00	LOA	
		Ticket total			
09/30/05	520559	Veh#:02			
		Petroleum contaminated soil	30.26	TON	
		Fuel surcharge landfill	1.00	PCT	
		Environmental fee	1.00	LOA	
		Ticket total			
09/30/05	520562	Veh#:01			
		Petroleum contaminated soil	32.39	TON	
		Fuel surcharge landfill	1.00	PCT	
		Environmental fee	1.00	LOA	
		Ticket total			
09/30/05	520563	Veh#:03			
		Petroleum contaminated soil	29.61	TON	
		Fuel surcharge landfill	1.00	PCT	
		Environmental fee	1.00	LOA	
		Ticket total			

Service Location: 740 508083 Anderson Environmental 406 Pine St. Kelso Wa 98626-2311

Date	Ticket	Description	Quantity	U/M
09/30/05	520564	Veh#:01		
		Petroleum contaminated soil	32.83	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
09/30/05	520570	Veh#:03		
		Petroleum contaminated soil	31.97	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
09/30/05	520573	Veh#:04		
		Petroleum contaminated soil	33.36	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
09/30/05	520575	Veh#:01		
		Petroleum contaminated soil	28.75	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
09/30/05	520595	Veh#:03		
		Petroleum contaminated soil	29.71	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
09/30/05	520596	Veh#:01		
		Petroleum contaminated soil	34.12	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
09/30/05	520605	Veh#:01		
		Petroleum contaminated soil	31.72	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
09/30/05	520608	Veh#:01		
		Petroleum contaminated soil	31.83	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
09/30/05	520610	Veh#:0		
		Petroleum contaminated soil	34.19	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
09/30/05	520612	Veh#:03		
		Petroleum contaminated soil	32.01	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
09/30/05	520619	Veh#:02		
		Petroleum contaminated soil	31.54	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
09/30/05	520626	Veh#:02		
		Petroleum contaminated soil	33.04	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA

WASTE MANAGEMENT

GREATER WENATCHEE LANDFILL
PO BOX 2963
WENATCHEE, WA 98807-2963

Account Number:
Invoice Date:
Invoice Number:
Due Date:
WM ezPay Account ID:

Service Location: 740-508083 Anderson Environmental: 406 Pine St: Kelso Wa 98626-2311

Date	Ticket	Description	Quantity	U/M
		Ticket total	31.77	TON
09/30/05	520631	Veh#:01	1.00	PCT
		Petroleum contaminated soil	1.00	LOA
		Fuel surcharge landfill		
		Environmental fee		
		Ticket total	33.06	TON
09/30/05	520632	Veh#:03	1.00	PCT
		Petroleum contaminated soil	1.00	LOA
		Fuel surcharge landfill		
		Environmental fee		
		Ticket total		
		Total Current Charges		

✓
1728.52 tons

11-11-05

WASTE MANAGEMENT

GREATER WENATCHEE LANDFILL
PO BOX 2963
WENATCHEE, WA 98807-2963

Fax TO: Troy
FROM: Mary

Customer:
Account Number:
Invoice Date:
Invoice Number:
Due Date:
WM ezPay Accour

Service Location: 740-508083 Anderson Environmental 406 Pine St Kelso Wa 98626-2311

Date	Ticket	Description	Quantity	U/M
10/03/05	520659	Veh#:02		
		Petroleum contaminated soil	32.10	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/03/05	520660	Veh#:03		
		Petroleum contaminated soil	31.18	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/03/05	520665	Veh#:0		
		Petroleum contaminated soil	31.49	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/03/05	520692	Veh#:02		
		Petroleum contaminated soil	28.40	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/03/05	520696	Veh#:02		
		Petroleum contaminated soil	31.15	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/03/05	520698	Veh#:01		
		Petroleum contaminated soil	29.68	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/03/05	520699	Veh#:03		
		Petroleum contaminated soil	31.67	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/03/05	520705	Veh#:01		
		Petroleum contaminated soil	32.63	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/03/05	520711	Veh#:01		
		Petroleum contaminated soil	31.27	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/03/05	520716	Veh#:02		
		Petroleum contaminated soil	31.80	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/03/05	520734	Veh#:0		
		Petroleum contaminated soil	30.39	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/03/05	520735	Veh#:0		
		Petroleum contaminated soil	31.52	TON
		Fuel surcharge landfill	1.00	PCT

Service Location: 740-508083 Anderson Environmental: 406 Pine St: Kelso Wa 98626-2311

Date	Ticket	Description	Quantity	U/M
		Environmental fee	1.00	LOA
		Ticket total		
10/03/05	520736	Veh#:c195		
		Petroleum contaminated soil	34.99	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/03/05	520737	Veh#:98		
		Petroleum contaminated soil	X 31.39	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/03/05	520739	Veh#:c194		
		Petroleum contaminated soil	30.18	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/03/05	520740	Veh#:c193		
		Petroleum contaminated soil	30.66	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/03/05	520741	Veh#:1		
		Petroleum contaminated soil	X 26.90	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/03/05	520744	Veh#:5550		
		Petroleum contaminated soil	X 31.85	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/03/05	520748	Veh#:ct13		
		Petroleum contaminated soil	29.77	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/03/05	520755	Veh#:21		
		Petroleum contaminated soil	X 31.10	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/03/05	520756	Veh#:51		
		Petroleum contaminated soil	X 31.22	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/03/05	520773	Veh#:c195		
		Petroleum contaminated soil	31.40	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/03/05	520774	Veh#:c194 w		
		Petroleum contaminated soil	30.57	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/03/05	520776	Veh#:38		
		Petroleum contaminated soil	X 33.47	TON

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WASTE MANAGEMENT

GREATER WENATCHEE LANDFILL
PO BOX 2963
WENATCHEE, WA 98807-2963

Account Number:
Invoice Date:
Invoice Number:
Due Date:
WM ezPay Account

Service Location: 740-508083 Anderson Environmental 406 Pine St Kelso Wa 98626-2311

Date	Ticket	Description	Quantity	U/M
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/03/05	520779	Veh#:03		
		Petroleum contaminated soil	32.59	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/03/05	520783	Veh#:599-de		
		Petroleum contaminated soil	32.85	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/03/05	520786	Veh#:c193		
		Petroleum contaminated soil	28.46	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/03/05	520794	Veh#:5550		
		Petroleum contaminated soil	32.05	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/03/05	520796	Veh#:0-may		
		Petroleum contaminated soil	30.25	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/03/05	520798	Veh#:c-196		
		Petroleum contaminated soil	29.00	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/04/05	520806	Veh#:51		
		Petroleum contaminated soil	33.26	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/04/05	520807	Veh#:21		
		Petroleum contaminated soil	33.52	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/04/05	520808	Veh#:98		
		Petroleum contaminated soil	34.35	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/04/05	520809	Veh#:5550		
		Petroleum contaminated soil	32.65	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/04/05	520826	Veh#:ct12		
		Petroleum contaminated soil	26.83	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/04/05	520828	Veh#:c-196		

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Service Location: 740-508083 Anderson Environmental 406 Pine St Kelso Wa 98626-2311				
Date	Ticket	Description	Quantity	U/M
		Petroleum contaminated soil	27.42	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/04/05	520830	Veh#:1-95		
		Petroleum contaminated soil	30.25	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/04/05	520831	Veh#:c-194		
		Petroleum contaminated soil	25.83	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/04/05	520832	Veh#:may		
		Petroleum contaminated soil	30.96	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/04/05	520834	Veh#:c192-y		
		Petroleum contaminated soil	25.46	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/04/05	520835	Veh#:c19		
		Petroleum contaminated soil	30.64	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/04/05	520839	Veh#:5550		
		Petroleum contaminated soil	31.23	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/04/05	520840	Veh#:0 -193		
		Petroleum contaminated soil	28.64	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/04/05	520844	Veh#:98-dee		
		Petroleum contaminated soil	32.31	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/04/05	520845	Veh#:c191-y		
		Petroleum contaminated soil	26.39	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/04/05	520849	Veh#:21		
		Petroleum contaminated soil	35.87	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/04/05	520852	Veh#:51		
		Petroleum contaminated soil	33.08	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		

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WASTE MANAGEMENT

GREATER WENATCHEE LANDFILL
PO BOX 2963
WENATCHEE, WA 98807-2963

Account Number:
Invoice Date:
Invoice Number:
Due Date:
WM ezPay Account

Service Location: 740-508083 Anderson Environmental 406 Pine St Kelso Wa 98626-2311

Date	Ticket	Description	Quantity	U/M
10/04/05	520861	Veh#:c-196		
		Petroleum contaminated soil	30.08	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/04/05	520863	Veh#:c-12		
		Petroleum contaminated soil	32.24	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/04/05	520865	Veh#:c-195		
		Petroleum contaminated soil	32.20	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/04/05	520866	Veh#:c194-r		
		Petroleum contaminated soil	28.93	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/04/05	520867	Veh#:may		
		Petroleum contaminated soil	31.82	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/04/05	520874	Veh#:c17-ma		
		Petroleum contaminated soil	33.97	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/04/05	520875	Veh#:5550		
		Petroleum contaminated soil	30.85	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/04/05	520876	Veh#:c193-		
		Petroleum contaminated soil	31.53	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/04/05	520880	Veh#:98-dee		
		Petroleum contaminated soil	31.23	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/04/05	520883	Veh#:51		
		Petroleum contaminated soil	29.29	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/04/05	520888	Veh#:21		
		Petroleum contaminated soil	32.77	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/04/05	520893	Veh#:0 yell		
		Petroleum contaminated soil	26.99	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA

Service Location: 740-508083 Anderson Environmental: 406 Pine St: Kelso Wa 98626-2311				
Date	Ticket	Description	Quantity	U/M
		Ticket total		
10/04/05	520898	Veh#:c-10		
		Petroleum contaminated soil	31.02	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/04/05	520904	Veh#:c-195		
		Petroleum contaminated soil	31.45	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/04/05	520905	Veh#:c-196		
		Petroleum contaminated soil	27.86	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/04/05	520906	Veh#:c- 194		
		Petroleum contaminated soil	29.13	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/04/05	520908	Veh#:may		
		Petroleum contaminated soil	28.48	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/04/05	520911	Veh#:c17		
		Petroleum contaminated soil	31.50	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/04/05	520913	Veh#:5550		
		Petroleum contaminated soil	31.47	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/04/05	520915	Veh#:c193		
		Petroleum contaminated soil	28.84	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/05/05	520927	Veh#:1		
		Petroleum contaminated soil	32.81	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/05/05	520928	Veh#:2		
		Petroleum contaminated soil	30.88	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/05/05	520929	Veh#:3		
		Petroleum contaminated soil	33.73	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/05/05	520933	Veh#:5		
		Petroleum contaminated soil	33.76	TON
		Fuel surcharge landfill	1.00	PCT

WASTE MANAGEMENT

GREATER WENATCHEE LANDFILL
PO BOX 2963
WENATCHEE, WA 98807-2963

Account Number:
Invoice Date:
Invoice Number:
Due Date:
WM ezPay Account

Service Location: 740-508083 Anderson Environmental, 406 Pine St, Kelso Wa 98626-2311

Date	Ticket	Description	Quantity	U/M
		Environmental fee	1.00	LOA
		Ticket total		
10/05/05	520934	Veh#:6		
		Petroleum contaminated soil	31.17	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/05/05	520952	Veh#:c 12		
		Petroleum contaminated soil	29.52	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/05/05	520959	Veh#:c194		
		Petroleum contaminated soil	30.14	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/05/05	520961	Veh#:c 193		
		Petroleum contaminated soil	31.76	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/05/05	520962	Veh#:c19-re		
		Petroleum contaminated soil	33.73	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/05/05	520963	Veh#:98-dee		
		Petroleum contaminated soil	31.29	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/05/05	520965	Veh#:5550		
		Petroleum contaminated soil	31.82	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/05/05	520967	Veh#:51		
		Petroleum contaminated soil	30.50	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/05/05	520970	Veh#:0 red		
		Petroleum contaminated soil	30.78	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/05/05	520975	Veh#:may		
		Petroleum contaminated soil	26.65	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/05/05	520992	Veh#:ct194		
		Petroleum contaminated soil	26.91	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/05/05	520996	Veh#:c 17		
		Petroleum contaminated soil	31.01	TON

Service Location: 740 508083 Anderson Environmental: 406 Pine St Kelso Wa 98626-2311

Date	Ticket	Description	Quantity	U/M
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/05/05	520998	Veh#:c193		
		Petroleum contaminated soil	27.27	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/05/05	521000	Veh#:98-dee		
		Petroleum contaminated soil	35.54	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/05/05	521002	Veh#:5550		
		Petroleum contaminated soil	32.24	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/05/05	521011	Veh#:may		
		Petroleum contaminated soil	28.39	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/05/05	521013	Veh#:21		
		Petroleum contaminated soil	33.59	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/05/05	521031	Veh#:51		
		Petroleum contaminated soil	30.80	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/05/05	521040	Veh#:c17		
		Petroleum contaminated soil	34.50	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/05/05	521041	Veh#:c193		
		Petroleum contaminated soil	32.54	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/05/05	521044	Veh#:c194 r		
		Petroleum contaminated soil	28.49	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/05/05	521046	Veh#:98-dee		
		Petroleum contaminated soil	34.00	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/05/05	521048	Veh#:5550		
		Petroleum contaminated soil	30.90	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/06/05	521062	Veh#:21		

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WASTE MANAGEMENT

GREATER WENATCHEE LANDFILL
PO BOX 2963
WENATCHEE, WA 98807-2963

Account Numbe
Invoice Date:
Invoice Number:
Due Date:
WM ezPay Acco

Service Location: 740 508083 Anderson Environm [illegible] St. Kelso Wa 98626-2311

Date	Ticket	Description	Quantity	U/M
		Petroleum contaminated soil	31.67	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/06/05	521063	Veh#:61		
		Petroleum contaminated soil	32.27	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/06/05	521064	Veh#:98		
		Petroleum contaminated soil	31.59	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/06/05	521067	Veh#:1		
		Petroleum contaminated soil	30.39	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/06/05	521068	Veh#:5550		
		Petroleum contaminated soil	31.49	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/06/05	521089	Veh#:193		
		Petroleum contaminated soil	31.61	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/06/05	521091	Veh#:17		
		Petroleum contaminated soil	33.11	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/06/05	521097	Veh#:192		
		Petroleum contaminated soil	27.22	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/06/05	521098	Veh#:191		
		Petroleum contaminated soil	28.81	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/06/05	521099	Veh#:194		
		Petroleum contaminated soil	31.45	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/06/05	521103	Veh#:14		
		Petroleum contaminated soil	30.55	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/06/05	521104	Veh#:001 Kettle		
		Petroleum contaminated soil	30.55	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		

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Service Location: 740-508083 Anderson Environmental 406 Pine St. Kelso Wa 98626-2311

Date	Ticket	Description	Quantity	U/M
10/06/05	521105	Veh#:196		
		Petroleum contaminated soil	32.28	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/06/05	521109	Veh#:206		
		Petroleum contaminated soil	34.37	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/06/05	521110	Veh#:1		
		Petroleum contaminated soil	31.46	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/06/05	521112	Veh#:15		
		Petroleum contaminated soil	32.21	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/06/05	521118	Veh#:98		
		Petroleum contaminated soil	32.39	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/06/05	521120	Veh#:51		
		Petroleum contaminated soil	32.71	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/06/05	521122	Veh#:5550		
		Petroleum contaminated soil	31.22	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/06/05	521130	Veh#:21		
		Petroleum contaminated soil	32.33	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/06/05	521142	Veh#:193		
		Petroleum contaminated soil	34.34	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/06/05	521144	Veh#:c17		
		Petroleum contaminated soil	34.71	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/06/05	521148	Veh#:192		
		Petroleum contaminated soil	31.74	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/06/05	521152	Veh#:194		
		Petroleum contaminated soil	32.35	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA

WASTE MANAGEMENT

GREATER WENATCHEE LANDFILL
PO BOX 2963
WENATCHEE, WA 98807-2963

Account Number:
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WM ezPay Account

Service Location: 740-508083 Anderson Environmental 406 Pine St Kelso Wa 98626-2311

Date	Ticket	Description	Quantity	U/M
		Ticket total		
10/06/05	521154	Veh#:191		
		Petroleum contaminated soil	30.47	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/06/05	521157	Veh#:14		
		Petroleum contaminated soil	31.73	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/06/05	521159	Veh#:1		
		Petroleum contaminated soil K	32.77	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/06/05	521161	Veh#:196		
		Petroleum contaminated soil	29.58	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/06/05	521164	Veh#:206		
		Petroleum contaminated soil	33.12	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/06/05	521166	Veh#:1		
		Petroleum contaminated soil	27.53	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/06/05	521169	Veh#:15		
		Petroleum contaminated soil	31.39	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/06/05	521173	Veh#:98		
		Petroleum contaminated soil	32.11	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/06/05	521176	Veh#:5550		
		Petroleum contaminated soil	30.73	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/06/05	521179	Veh#:51		
		Petroleum contaminated soil	31.35	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/06/05	521182	Veh#:21		
		Petroleum contaminated soil	30.04	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/06/05	521191	Veh#:193		
		Petroleum contaminated soil	31.57	TON
		Fuel surcharge landfill	1.00	PCT

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Service Location: 740-508083 Anderson Environmental: 406 Pine St: Kelso Wa 98626-2311

Date	Ticket	Description	Quantity	U/M
		Environmental fee	1.00	LOA
		Ticket total		
10/06/05	521194	Veh#:17		
		Petroleum contaminated soil	32.85	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/06/05	521195	Veh#:194		
		Petroleum contaminated soil	27.82	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/06/05	521198	Veh#:192		
		Petroleum contaminated soil	22.68	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/06/05	521202	Veh#:191		
		Petroleum contaminated soil	25.10	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/06/05	521203	Veh#:14		
		Po#:g		
		Petroleum contaminated soil	26.62	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/06/05	521205	Veh#:196		
		Petroleum contaminated soil	28.24	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/06/05	521206	Veh#:206		
		Petroleum contaminated soil	28.97	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/06/05	521208	Veh#:1		
		Petroleum contaminated soil	X 28.51	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/06/05	521211	Veh#:15		
		Petroleum contaminated soil	30.25	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
0/06/05	521215	Veh#:98		
		Petroleum contaminated soil	X 32.29	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
0/06/05	521216	Veh#:5550		
		Petroleum contaminated soil	X 30.28	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/07/05	521231	Veh#:21		

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WASTE MANAGEMENT

GREATER WENATCHEE LANDFILL
PO BOX 2963
WENATCHEE, WA 98807-2963

Account Number:
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WM ezPay Account

Service Location: 740-508083 Anderson Environmental: 406 Pine St Kelso Wa 98626-2311

Date	Ticket	Description	Quantity	U/M
		Petroleum contaminated soil	34.23	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/07/05	521232	Veh#:98		
		Petroleum contaminated soil	31.92	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/07/05	521233	Veh#:51		
		Petroleum contaminated soil	30.57	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/07/05	521234	Veh#:5550		
		Petroleum contaminated soil	31.32	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/07/05	521235	Veh#:1		
		Petroleum contaminated soil	29.14	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/07/05	521255	Veh#:c12		
		Petroleum contaminated soil	25.83	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/07/05	521258	Veh#:15		
		Petroleum contaminated soil	28.98	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/07/05	521259	Veh#:207		
		Petroleum contaminated soil	32.83	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/07/05	521260	Veh#:193		
		Petroleum contaminated soil	27.18	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/07/05	521262	Veh#:196		
		Petroleum contaminated soil	27.72	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/07/05	521263	Veh#:02		
		Petroleum contaminated soil	26.85	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/07/05	521264	Veh#:17		
		Petroleum contaminated soil	28.82	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		

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Service Location: 740-508083 Anderson Environmental: 406 Pine St: Kelso Wa 98626-2311				
Date	Ticket	Description	Quantity	U/M
10/07/05	521267	Veh#:98		
		Petroleum contaminated soil	31.31	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/07/05	521268	Veh#:1		
		Petroleum contaminated soil	30.27	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/07/05	521270	Veh#:5550		
		Petroleum contaminated soil	31.78	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/07/05	521275	Veh#:21		
		Petroleum contaminated soil	34.57	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/07/05	521280	Veh#:51		
		Petroleum contaminated soil	32.63	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/07/05	521298	Veh#:c12		
		Petroleum contaminated soil	27.49	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/07/05	521299	Veh#:207		
		Petroleum contaminated soil	29.24	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/07/05	521304	Veh#:15		
		Petroleum contaminated soil	27.62	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/07/05	521307	Veh#:193		
		Petroleum contaminated soil	27.38	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/07/05	521310	Veh#:196		
		Petroleum contaminated soil	26.56	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/07/05	521311	Veh#:1		
		Petroleum contaminated soil	29.17	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/07/05	521315	Veh#:98		
		Petroleum contaminated soil	30.95	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA

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WASTE MANAGEMENT

GREATER WENATCHEE LANDFILL
PO BOX 2963
WENATCHEE, WA 98807-2963

Account Number:
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WM ezPay Accoun

Service Location: 740-508083 Anderson Environmental 406 Pine St Kelso Wa 98626-2311

Date	Ticket	Description	Quantity	U/M
		Ticket total		
10/07/05	521317	Veh#:5550		
		Petroleum contaminated soil	31.58	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/07/05	521322	Veh#:51		
		Petroleum contaminated soil	29.84	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/07/05	521324	Veh#:21		
		Petroleum contaminated soil	33.03	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/10/05	521370	Veh#:98		
		Petroleum contaminated soil	33.32	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/10/05	521373	Veh#:1		
		Petroleum contaminated soil	29.10	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/10/05	521374	Veh#:21		
		Petroleum contaminated soil	34.70	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/10/05	521375	Veh#:5550		
		Petroleum contaminated soil	31.45	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/10/05	521393	Veh#:c12		
		Petroleum contaminated soil	32.75	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/10/05	521394	Veh#:c193		
		Petroleum contaminated soil	32.29	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/10/05	521396	Veh#:51		
		Petroleum contaminated soil	32.52	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/10/05	521399	Veh#:c14		
		Petroleum contaminated soil	30.56	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/10/05	521405	Veh#:c17		
		Petroleum contaminated soil	32.50	TON
		Fuel surcharge landfill	1.00	PCT

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Service Location: 740 508083 Anderson Environmental: 406 Pine St. Kelso Wa 98626-2311

Date	Ticket	Description	Quantity	U/M
		Environmental fee	1.00	LOA
		Ticket total		
10/10/05	521406	Veh#:206		
		Petroleum contaminated soil	24.83	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/10/05	521407	Veh#:191-ye		
		Petroleum contaminated soil	27.42	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/10/05	521408	Veh#:98-dee		
		Petroleum contaminated soil	31.87	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/10/05	521409	Veh#:may		
		Petroleum contaminated soil	29.62	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/10/05	521411	Veh#:5550		
		Petroleum contaminated soil	32.09	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/10/05	521418	Veh#:21		
		Petroleum contaminated soil	29.76	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/10/05	521436	Veh#:c12		
		Petroleum contaminated soil	25.68	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/10/05	521438	Veh#:c193		
		Petroleum contaminated soil	28.00	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/10/05	521444	Veh#:51		
		Petroleum contaminated soil	30.95	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/10/05	521445	Veh#:c17		
		Petroleum contaminated soil	29.29	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/10/05	521446	Veh#:c14		
		Petroleum contaminated soil	27.98	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/10/05	521448	Veh#:may		
		Petroleum contaminated soil	27.19	TON

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WASTE MANAGEMENT

GREATER WENATCHEE LANDFILL
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WENATCHEE, WA 98807-2963

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Service Location: 740-508083 Anderson Environmental 406 Pine St Kelso Wa 98626-2311

Date	Ticket	Description	Quantity	U/M
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/10/05	521451	Veh#:98-dee		
		Petroleum contaminated soil	31.73	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/10/05	521454	Veh#:c191		
		Petroleum contaminated soil	27.33	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/10/05	521456	Veh#:5550		
		Petroleum contaminated soil	31.26	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/10/05	521460	Veh#:21		
		Petroleum contaminated soil	33.28	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/10/05	521470	Veh#:c12		
		Petroleum contaminated soil	28.40	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/10/05	521472	Veh#:c193		
		Manf#:		
		Petroleum contaminated soil	27.58	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/10/05	521480	Veh#:51		
		Petroleum contaminated soil	30.48	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/10/05	521481	Veh#:may		
		Petroleum contaminated soil	27.18	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/10/05	521482	Veh#:c17		
		Petroleum contaminated soil	30.13	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/10/05	521488	Veh#:98-dee		
		Petroleum contaminated soil	31.97	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/11/05	521499	Veh#:21		
		Petroleum contaminated soil	34.03	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		

Service Location: 740-508083 Anderson Environmental: 406 Pine St: Kelso Wa 98626-2311

Date	Ticket	Description	Quantity	U/M	Ra
10/11/05	521500	Veh#:51			
		Petroleum contaminated soil	X 30.93	TON	
		Fuel surcharge landfill	1.00	PCT	
		Environmental fee	1.00	LOA	
		Ticket total			
10/11/05	521501	Veh#:98			
		Petroleum contaminated soil	X 31.30	TON	
		Fuel surcharge landfill	1.00	PCT	
		Environmental fee	1.00	LOA	
		Ticket total			
10/11/05	521504	Veh#:1			
		Petroleum contaminated soil	X 30.74	TON	
		Fuel surcharge landfill	1.00	PCT	
		Environmental fee	1.00	LOA	
		Ticket total			
10/11/05	521506	Veh#:5550			
		Petroleum contaminated soil	X 30.79	TON	
		Fuel surcharge landfill	1.00	PCT	
		Environmental fee	1.00	LOA	
		Ticket total			
10/11/05	521508	Veh#:14			
		Petroleum contaminated soil	25.94	TON	
		Fuel surcharge landfill	1.00	PCT	
		Environmental fee	1.00	LOA	
		Ticket total			
10/11/05	521529	Veh#:kettle Kettle			
		Petroleum contaminated soil	X 28.25	TON	
		Fuel surcharge landfill	1.00	PCT	
		Environmental fee	1.00	LOA	
		Ticket total			
10/11/05	521531	Veh#:c 15			
		Petroleum contaminated soil	28.33	TON	
		Fuel surcharge landfill	1.00	PCT	
		Environmental fee	1.00	LOA	
		Ticket total			
10/11/05	521532	Veh#:c17			
		Petroleum contaminated soil	29.90	TON	
		Fuel surcharge landfill	1.00	PCT	
		Environmental fee	1.00	LOA	
		Ticket total			
10/11/05	521533	Veh#:c206			
		Petroleum contaminated soil	29.49	TON	
		Fuel surcharge landfill	1.00	PCT	
		Environmental fee	1.00	LOA	
		Ticket total			
10/11/05	521534	Veh#:c205			
		Petroleum contaminated soil	32.52	TON	
		Fuel surcharge landfill	1.00	PCT	
		Environmental fee	1.00	LOA	
		Ticket total			
10/11/05	521535	Veh#:may			
		Petroleum contaminated soil	X 29.64	TON	
		Fuel surcharge landfill	1.00	PCT	
		Environmental fee	1.00	LOA	
		Ticket total			
10/11/05	521539	Veh#:5550			
		Petroleum contaminated soil	X 31.99	TON	
		Fuel surcharge landfill	1.00	PCT	
		Environmental fee	1.00	LOA	

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WASTE MANAGEMENT

GREATER WENATCHEE LANDFILL
PO BOX 2963
WENATCHEE, WA 98807-2963

Account Number:
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WM ezPay Account

Service Location: 740-508083 Anderson Environmental- 406 Pine St Kelso Wa 98626-2311

Date	Ticket	Description	Quantity	U/M
		Ticket total		
10/11/05	521543	Veh#:21		
		Petroleum contaminated soil	X 29.79	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/11/05	521545	Veh#:98-dee		
		Petroleum contaminated soil	X 28.89	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/11/05	521550	Veh#:c14		
		Petroleum contaminated soil	29.56	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/11/05	521551	Veh#:51		
		Petroleum contaminated soil	X 30.99	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/11/05	521566	Veh#:kettle		
		Petroleum contaminated soil (Kettle)	X 31.69	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/11/05	521569	Veh#:c15		
		Petroleum contaminated soil	31.98	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/11/05	521573	Veh#:c206		
		Petroleum contaminated soil	34.22	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/11/05	521575	Veh#:c205		
		Petroleum contaminated soil	34.68	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/11/05	521577	Veh#:may		
		Petroleum contaminated soil	X 27.44	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/11/05	521579	Veh#:5550		
		Petroleum contaminated soil	X 31.23	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/11/05	521580	Veh#:c17		
		Petroleum contaminated soil	26.28	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/11/05	521583	Veh#:98-dee		
		Petroleum contaminated soil	X 32.60	TON
		Fuel surcharge landfill	1.00	PCT

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Service Location: 740-508083 Anderson Environmental: 406 Pine St: Kelso Wa 98626-2311					
Date	Ticket	Description	Quantity	U/M	Rate
		Environmental fee	1.00	LOA	
		Ticket total			
10/11/05	521587	Veh#:c14			
		Petroleum contaminated soil	27.44	TON	1
		Fuel surcharge landfill	1.00	PCT	1
		Environmental fee	1.00	LOA	
		Ticket total			
10/11/05	521588	Veh#:21			
		Petroleum contaminated soil	32.64	TON	1
		Fuel surcharge landfill	1.00	PCT	2
		Environmental fee	1.00	LOA	
		Ticket total			
10/11/05	521590	Veh#:51			
		Petroleum contaminated soil	30.47	TON	1
		Fuel surcharge landfill	1.00	PCT	1
		Environmental fee	1.00	LOA	
		Ticket total			
10/11/05	521592	Veh#:c193			
		Petroleum contaminated soil	30.91	TON	
		Fuel surcharge landfill	1.00	PCT	
		Environmental fee	1.00	LOA	
		Ticket total			
10/11/05	521602	Veh#:c15			
		Petroleum contaminated soil	31.19	TON	
		Fuel surcharge landfill	1.00	PCT	
		Environmental fee	1.00	LOA	
		Ticket total			
10/11/05	521607	Veh#:kettle			
		Petroleum contaminated soil	30.43	TON	
		Environmental fee	1.00	LOA	
		Ticket total			
10/11/05	521610	Veh#:c205			
		Petroleum contaminated soil	31.29	TON	
		Environmental fee	1.00	LOA	
		Ticket total			
10/11/05	521611	Veh#:c206-y			
		Petroleum contaminated soil	29.21	TON	
		Environmental fee	1.00	LOA	
		Ticket total			
10/11/05	521614	Veh#:may			
		Petroleum contaminated soil	28.35	TON	
		Fuel surcharge landfill	1.00	PCT	
		Environmental fee	1.00	LOA	
		Ticket total			
10/11/05	521616	Veh#:5550			
		Petroleum contaminated soil	31.41	TON	
		Fuel surcharge landfill	1.00	PCT	
		Environmental fee	1.00	LOA	
		Ticket total			
10/11/05	521620	Veh#:c19			
		Petroleum contaminated soil	33.31	TON	
		Fuel surcharge landfill	1.00	PCT	
		Environmental fee	1.00	LOA	
		Ticket total			
10/12/05	521635	Veh#:21			
		Petroleum contaminated soil	36.37	TON	
		Environmental fee	1.00	LOA	
		Ticket total			
10/12/05	521636	Veh#:98			

WASTE MANAGEMENT

GREATER WENATCHEE LANDFILL
PO BOX 2963
WENATCHEE, WA 98807-2963

Account Number:
Invoice Date:
Invoice Number:
Due Date:
WM ezPay Account

Service Location: 740-508083 Anderson Environmental- 406 Pine St- Kelso Wa 98626-2311

Date	Ticket	Description	Quantity	U/M
		Petroleum contaminated soil	31.93	TON
		Environmental fee	1.00	LOA
		Ticket total		
10/12/05	521637	Veh#:1		
		Petroleum contaminated soil	30.72	TON
		Environmental fee	1.00	LOA
		Ticket total		
10/12/05	521638	Veh#:51		
		Petroleum contaminated soil	33.27	TON
		Environmental fee	1.00	LOA
		Ticket total		
10/12/05	521639	Veh#:5550		
		Petroleum contaminated soil	31.23	TON
		Environmental fee	1.00	LOA
		Ticket total		
10/12/05	521640	Veh#:1		
		Petroleum contaminated soil Kelli	32.17	TON
		Environmental fee	1.00	LOA
		Ticket total		
10/12/05	521663	Veh#:c193		
		Petroleum contaminated soil	28.19	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/12/05	521664	Veh#:c14		
		Petroleum contaminated soil	30.53	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/12/05	521667	Veh#:c206		
		Petroleum contaminated soil	30.31	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/12/05	521668	Veh#:c207		
		Petroleum contaminated soil	32.33	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/12/05	521672	Veh#:c15		
		Petroleum contaminated soil	28.49	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/12/05	521675	Veh#:may		
		Petroleum contaminated soil	25.63	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/12/05	521676	Veh#:c17		
		Petroleum contaminated soil	31.58	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/12/05	521677	Veh#:98-dee		
		Petroleum contaminated soil	32.36	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		

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Service Location: 740-508083 Anderson Environmental: 406 Pine St. Kelso Wa 98626-2311

Date	Ticket	Description	Quantity	U/M
10/12/05	521678	Veh#:5550		
		Petroleum contaminated soil	31.37	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/12/05	521681	Veh#:21		
		Petroleum contaminated soil	31.69	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/12/05	521690	Veh#:kettle		
		Petroleum contaminated soil (kettle)	28.64	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/12/05	521697	Veh#:51		
		Petroleum contaminated soil	31.25	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/12/05	521710	Veh#:may		
		Petroleum contaminated soil	27.13	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/12/05	521713	Veh#:5550		
		Petroleum contaminated soil	32.12	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/12/05	521720	Veh#:98-dee		
		Petroleum contaminated soil	28.44	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/12/05	521726	Veh#:21		
		Petroleum contaminated soil	33.80	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/12/05	521731	Veh#:kettle (kettle)		
		Petroleum contaminated soil	26.76	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/12/05	521741	Veh#:51		
		Petroleum contaminated soil	29.82	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/19/05	522213	Veh#:207		
		Petroleum contaminated soil	28.97	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/19/05	522216	Veh#:c12		
		Petroleum contaminated soil	28.28	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA

WASTE MANAGEMENT

GREATER WENATCHEE LANDFILL
PO BOX 2963
WENATCHEE, WA 98807-2963

Account Number:
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Due Date:
WM ezPay Account

Service Location: 740-508083 Anderson Environmental 406 Pine St Kelso Wa 98626-2311

Date	Ticket	Description	Quantity	U/M
		Ticket total		
10/19/05	522217	Veh#:c209		
		Petroleum contaminated soil	34.95	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/19/05	522220	Veh#:20-yel		
		Petroleum contaminated soil	29.78	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/19/05	522225	Veh#:c17		
		Petroleum contaminated soil	30.16	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/19/05	522247	Veh#:207		
		Petroleum contaminated soil	33.08	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/19/05	522252	Veh#:c12		
		Petroleum contaminated soil	31.32	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/21/05	522428	Veh#:0		
		Msw--landfill	7.00	YDS
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Refuse tax		
		Ticket total		
10/24/05	522579	Veh#:ct13		
		Petroleum contaminated soil	34.94	TON
		Environmental fee	1.00	LOA
		Ticket total		
10/25/05	522628	Veh#:c13		
		Petroleum contaminated soil	29.82	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
10/25/05	522661	Veh#:c196		
		Petroleum contaminated soil	31.27	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
		Late payment fee		

Randy says "ND" ??? 255.32

Total Current Charges

Credits and Adjustments Detail

10/20/2005 Credit If msw

Total Credits and Adjustments

Enviro fee 269 x 150 = $403.50
Contaminated 8,246.43 x 17.85 = 147,198.81
Fuel Surcharge 5,737.44
10/21 - Disposal - Trucks $68.41

740010

WASTE MANAGEMENT

GREATER WENATCHEE LANDFILL
PO BOX 2963
WENATCHEE, WA 98807-2963

Customer: A
Account Number:
Invoice Date:
Invoice Number:
Due Date:
WM ezPay Account ID

Service Location: 740-508083 Anderson Environmental 406 Pine St Kelso Wa 98626-2311

Date	Ticket	Description	Quantity	U/M
11/17/05	524281	Veh#:1		
		Petroleum contaminated soil	27.16	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
11/17/05	524283	Veh#:203		
		Petroleum contaminated soil	30.56	TON
		Environmental fee	1.00	LOA
		Ticket total		
11/17/05	524287	Veh#:206		
		Petroleum contaminated soil	29.11	TON
		Environmental fee	1.00	LOA
		Ticket total		
11/17/05	524289	Veh#:1		
		Petroleum contaminated soil	30.37	TON
		Environmental fee	1.00	LOA
		Ticket total		
11/17/05	524291	Veh#:208		
		Petroleum contaminated soil	30.61	TON
		Environmental fee	1.00	LOA
		Ticket total		
11/17/05	524293	Veh#:17		
		Petroleum contaminated soil	31.86	TON
		Environmental fee	1.00	LOA
		Ticket total		
1/17/05	524297	Veh#:195		
		Petroleum contaminated soil	31.37	TON
		Environmental fee	1.00	LOA
		Ticket total		
1/17/05	524323	Veh#:209		
		Petroleum contaminated soil	29.21	TON
		Environmental fee	1.00	LOA
		Ticket total		
1/17/05	524326	Veh#:203		
		Petroleum contaminated soil	28.15	TON
		Environmental fee	1.00	LOA
		Ticket total		
1/17/05	524330	Veh#:206		
		Petroleum contaminated soil	30.50	TON
		Environmental fee	1.00	LOA
		Ticket total		
1/17/05	524334	Veh#:208		
		Petroleum contaminated soil	26.99	TON
		Environmental fee	1.00	LOA
		Ticket total		
1/17/05	524336	Veh#:12		
		Petroleum contaminated soil	27.49	TON
		Environmental fee	1.00	LOA
		Ticket total		
1/17/05	524337	Veh#:17		
		Petroleum contaminated soil	27.77	TON
		Environmental fee	1.00	LOA
		Ticket total		
1/17/05	524344	Veh#:195		
		Petroleum contaminated soil	28.60	TON
		Environmental fee	1.00	LOA

Service Location: 740-508083 Anderson Environmental: 406 Pine St: Kelso Wa 98626-2311				
Date	Ticket	Description	Quantity	U/M
		Ticket total		
11/17/05	524364	Veh#:203		
		Petroleum contaminated soil	33.35	TON
		Environmental fee	1.00	LOA
		Ticket total		
11/17/05	524374	Veh#:208		
		Petroleum contaminated soil	32.39	TON
		Environmental fee	1.00	LOA
		Ticket total		
11/17/05	524378	Veh#:206		
		Petroleum contaminated soil	32.98	TON
		Environmental fee	1.00	LOA
		Ticket total		
11/17/05	524379	Veh#:12		
		Petroleum contaminated soil	34.87	TON
		Environmental fee	1.00	LOA
		Ticket total		
11/17/05	524380	Veh#:17		
		Petroleum contaminated soil	33.54	TON
		Environmental fee	1.00	LOA
		Ticket total		
11/18/05	524408	Veh#:195		
		Petroleum contaminated soil	34.13	TON
		Environmental fee	1.00	LOA
		Ticket total		
11/18/05	524425	Veh#:208		
		Petroleum contaminated soil	29.21	TON
		Environmental fee	1.00	LOA
		Ticket total		
11/18/05	524426	Veh#:203		
		Petroleum contaminated soil	30.15	TON
		Environmental fee	1.00	LOA
		Ticket total		
11/18/05	524428	Veh#:206		
		Petroleum contaminated soil	31.85	TON
		Environmental fee	1.00	LOA
		Ticket total		
11/18/05	524429	Veh#:12		
		Petroleum contaminated soil	29.15	TON
		Environmental fee	1.00	LOA
		Ticket total		
11/18/05	524430	Veh#:17		
		Petroleum contaminated soil	31.82	TON
		Environmental fee	1.00	LOA
		Ticket total		
11/18/05	524438	Veh#:195		
		Petroleum contaminated soil	27.36	TON
		Environmental fee	1.00	LOA
		Ticket total		
11/18/05	524458	Veh#:208		
		Petroleum contaminated soil	32.53	TON
		Environmental fee	1.00	LOA
		Ticket total		
11/18/05	524461	Veh#:203		
		Petroleum contaminated soil	31.26	TON
		Environmental fee	1.00	LOA
		Ticket total		
11/18/05	524465	Veh#:206		

WASTE MANAGEMENT
GREATER WENATCHEE LANDFILL
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WENATCHEE, WA 98807-2963

Account Number:
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WM ezPay Account ID:

Service Location: 740-508083 Anderson Environmental: 406 Pine St: Kelso Wa 98626-2311

Date	Ticket	Description	Quantity	U/M	Ra
		Petroleum contaminated soil	30.41	TON	
		Environmental fee	1.00	LOA	
		Ticket total			
11/18/05	524467	Veh#:12			
		Petroleum contaminated soil	26.93	TON	
		Environmental fee	1.00	LOA	
		Ticket total			
1/18/05	524468	Veh#:17			
		Petroleum contaminated soil	29.25	TON	
		Environmental fee	1.00	LOA	
		Ticket total			
1/18/05	524479	Veh#:195			
		Petroleum contaminated soil	33.64	TON	
		Environmental fee	1.00	LOA	
		Ticket total			
1/22/05	524665	Veh#:208			
		Petroleum contaminated soil	28.92	TON	
		Environmental fee	1.00	LOA	
		Ticket total			
1/22/05	524666	Veh#:12			
		Petroleum contaminated soil	28.18	TON	
		Environmental fee	1.00	LOA	
		Ticket total			
1/22/05	524669	Veh#:c 14			
		Petroleum contaminated soil	29.75	TON	
		Environmental fee	1.00	LOA	
		Ticket total			
1/22/05	524671	Veh#:38			
		Petroleum contaminated soil	31.24	TON	
		Environmental fee	1.00	LOA	
		Ticket total			
1/22/05	524672	Veh#:8			
		Petroleum contaminated soil	31.03	TON	
		Environmental fee	1.00	LOA	
		Ticket total			
1/22/05	524675	Veh#:3			
		Petroleum contaminated soil	30.76	TON	
		Environmental fee	1.00	LOA	
		Ticket total			
1/22/05	524698	Veh#:208			
		Petroleum contaminated soil	29.23	TON	
		Environmental fee	1.00	LOA	
		Ticket total			
1/22/05	524700	Veh#:12			
		Petroleum contaminated soil	29.93	TON	
		Environmental fee	1.00	LOA	
		Ticket total			
1/22/05	524703	Veh#:14			
		Petroleum contaminated soil	26.26	TON	
		Environmental fee	1.00	LOA	
		Ticket total			
11/22/05	524704	Veh#:38			
		Petroleum contaminated soil	28.18	TON	
		Environmental fee	1.00	LOA	
		Ticket total			
11/22/05	524707	Veh#:8			
		Petroleum contaminated soil	31.27	TON	

Service Location: 740-508083 Anderson Environmental: 406 Pine St: Kelso Wa 98626-2311				
Date	Ticket	Description	Quantity	U/M
		Environmental fee	1.00	LOA
		Ticket total		
11/22/05	524710	Veh#:3		
		Petroleum contaminated soil	28.86	TON
		Environmental fee	1.00	LOA
		Ticket total		
11/22/05	524725	Veh#:208		
		Petroleum contaminated soil	29.46	TON
		Environmental fee	1.00	LOA
		Ticket total		
11/22/05	524729	Veh#:12		
		Petroleum contaminated soil	29.54	TON
		Environmental fee	1.00	LOA
		Ticket total		
11/22/05	524731	Veh#:14		
		Petroleum contaminated soil	30.87	TON
		Environmental fee	1.00	LOA
		Ticket total		
11/22/05	524736	Veh#:8		
		Petroleum contaminated soil	32.39	TON
		Environmental fee	1.00	LOA
		Ticket total		
11/22/05	524737	Veh#:t16		
		Petroleum contaminated soil	30.30	TON
		Environmental fee	1.00	LOA
		Ticket total		
11/22/05	524739	Veh#:38		
		Petroleum contaminated soil	34.14	TON
		Environmental fee	1.00	LOA
		Ticket total		
11/22/05	524746	Veh#:3		
		Petroleum contaminated soil	31.24	TON
		Environmental fee	1.00	LOA
		Ticket total		
11/23/05	524771	Veh#:17		
		Petroleum contaminated soil	30.62	TON
		Environmental fee	1.00	LOA
		Ticket total		
11/23/05	524774	Veh#:202		
		Petroleum contaminated soil	30.05	TON
		Environmental fee	1.00	LOA
		Ticket total		
11/23/05	524776	Veh#:207		
		Petroleum contaminated soil	29.87	TON
		Environmental fee	1.00	LOA
		Ticket total		
11/23/05	524777	Veh#:38		
		Petroleum contaminated soil	29.34	TON
		Environmental fee	1.00	LOA
		Ticket total		
11/23/05	524778	Veh#:209		
		Petroleum contaminated soil	32.58	TON
		Environmental fee	1.00	LOA
		Ticket total		
11/23/05	524779	Veh#:8		
		Petroleum contaminated soil	30.79	TON
		Environmental fee	1.00	LOA
		Ticket total		

430.05

WASTE MANAGEMENT

GREATER WENATCHEE LANDFILL
PO BOX 2963
WENATCHEE, WA 98807-2963

Account Number:
Invoice Date:
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Due Date:
WM ezPay Account

Service Location: 740 508083 Anderson Environmental: 406 Pine St: Kelso Wa 98626-2311

Date	Ticket	Description	Quantity	U/M
1/23/05	524781	Veh#:3		
		Petroleum contaminated soil	31.43	TON
		Environmental fee	1.00	LOA
		Ticket total		
1/23/05	524799	Veh#:17		
		Petroleum contaminated soil	28.54	TON
		Environmental fee	1.00	LOA
		Ticket total		
1/23/05	524802	Veh#:202		
		Petroleum contaminated soil	29.32	TON
		Environmental fee	1.00	LOA
		Ticket total		
1/23/05	524803	Veh#:207		
		Petroleum contaminated soil	33.29	TON
		Environmental fee	1.00	LOA
		Ticket total		
1/23/05	524805	Veh#:38		
		Petroleum contaminated soil	30.97	TON
		Environmental fee	1.00	LOA
		Ticket total		
1/23/05	524808	Veh#:8		
		Petroleum contaminated soil	31.75	TON
		Environmental fee	1.00	LOA
		Ticket total		
1/23/05	524810	Veh#:0		
		Petroleum contaminated soil	31.68	TON
		Environmental fee	1.00	LOA
		Ticket total		
1/23/05	524823	Veh#:19		
		Petroleum contaminated soil	29.24	TON
		Environmental fee	1.00	LOA
		Ticket total		
1/23/05	524836	Veh#:202		
		Petroleum contaminated soil	29.54	TON
		Environmental fee	1.00	LOA
		Ticket total		
1/23/05	524837	Veh#:17		
		Petroleum contaminated soil	29.13	TON
		Environmental fee	1.00	LOA
		Ticket total		
11/23/05	524840	Veh#:207		
		Petroleum contaminated soil	30.85	TON
		Environmental fee	1.00	LOA
		Ticket total		
11/23/05	524846	Veh#:3		
		Petroleum contaminated soil	32.01	TON
		Environmental fee	1.00	LOA
		Ticket total		
11/30/05	525106	Veh#:0		
		Petroleum contaminated soil	27.35	TON
		Environmental fee	1.00	LOA
		Ticket total		
11/30/05	525107	Veh#:c209		
		Petroleum contaminated soil	25.50	TON
		Environmental fee	1.00	LOA
		Ticket total		
11/30/05	525108	Veh#:t16		

Service Location: 740-508083 Anderson Environmental: 406 Pine St: Kelso Wa 98626-2311				
Date	Ticket	Description	Quantity	U/M
		Petroleum contaminated soil	28.26	TON
		Environmental fee	1.00	LOA
		Ticket total		
11/30/05	525113	Veh#:ct 14		
		Petroleum contaminated soil	27.98	TON
		Environmental fee	1.00	LOA
		Ticket total		
11/30/05	525115	Veh#:38		
		Petroleum contaminated soil	27.87	TON
		Environmental fee	1.00	LOA
		Ticket total		
11/30/05	525116	Veh#:8		
		Petroleum contaminated soil	26.23	TON
		Environmental fee	1.00	LOA
		Ticket total		
11/30/05	525134	Veh#:t16		
		Petroleum contaminated soil	33.60	TON
		Environmental fee	1.00	LOA
		Ticket total		
11/30/05	525136	Veh#:c17		
		Petroleum contaminated soil	33.19	TON
		Environmental fee	1.00	LOA
		Ticket total		
11/30/05	525137	Veh#:c209		
		Petroleum contaminated soil	30.21	TON
		Environmental fee	1.00	LOA
		Ticket total		
11/30/05	525139	Veh#:c14		
		Petroleum contaminated soil	30.13	TON
		Environmental fee	1.00	LOA
		Ticket total		
11/30/05	525140	Veh#:38		
		Petroleum contaminated soil	29.73	TON
		Environmental fee	1.00	LOA
		Ticket total		
11/30/05	525141	Veh#:8		
		Petroleum contaminated soil	32.93	TON
		Environmental fee	1.00	LOA
		Ticket total		
11/30/05	525156	Veh#:t16		
		Petroleum contaminated soil	33.33	TON
		Environmental fee	1.00	LOA
		Ticket total		
11/30/05	525161	Veh#:c17		
		Petroleum contaminated soil	30.71	TON
		Environmental fee	1.00	LOA
		Ticket total		
11/30/05	525162	Veh#:c209		
		Petroleum contaminated soil	30.64	TON
		Environmental fee	1.00	LOA
		Ticket total		
11/30/05	525164	Veh#:38		
		Petroleum contaminated soil	32.37	TON
		Environmental fee	1.00	LOA
		Ticket total		
11/30/05	525165	Veh#:c14		
		Petroleum contaminated soil	32.03	TON
		Environmental fee	1.00	LOA

45121

WASTE MANAGEMENT

GREATER WENATCHEE LANDFILL
PO BOX 2963
WENATCHEE WA 98807-2963

Account Number:
Invoice Date:
Invoice Number:
Due Date:
WM ezPay Account:

Service Location: 740 508083 Anderson Environmental 406 Pine St Kelso Wa 98626-2311

Date	Ticket	Description	Quantity	U/M
		Ticket total		
1/30/05	525168	Veh#:8		
		Petroleum contaminated soil	29.81	TON
		Environmental fee	1.00	LOA
		Ticket total		

Total Current Charges

Payments Received Detail

11/29/2005 Payment - thank you
11/29/2005 Payment - thank you
11/29/2005 Payment - thank you
11/29/2005 Payment - thank you

Total Payments Received

29.81

total tons 263899 ✓

WASTE MANAGEMENT
GREATER WENATCHEE LANDFILL
PO BOX 2963
WENATCHEE, WA 98807-2963

Customer:	ANDERSON ENVIRONMENTAL
Account Number:	740-0508083-1048-1
Invoice Date:	01/01/200
Invoice Number:	0012981-1048-
Due Date:	1/31/200
WM ezPay Account ID:	00007-22539-1500

Service Location: 740-508083 Anderson Environmental: 406 Pine St Kelso Wa 98626-2311

Date	Ticket	Description	Quantity	U/M
12/05/05	525336	Veh#:01		
		Petroleum contaminated soil	25.93	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
12/05/05	525339	Veh#:c209		
		Petroleum contaminated soil	26.87	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
12/05/05	525343	Veh#:c207		
		Petroleum contaminated soil	28.81	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
12/05/05	525344	Veh#:c12		
		Petroleum contaminated soil	26.81	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
12/05/05	525362	Veh#:38		
		Petroleum contaminated soil	28.72	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
12/05/05	525365	Veh#:c209		
		Petroleum contaminated soil	31.63	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
12/05/05	525368	Veh#:312		
		Petroleum contaminated soil	28.43	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
12/05/05	525382	Veh#:38		
		Petroleum contaminated soil	27.00	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
12/05/05	525386	Veh#:c209		
		Petroleum contaminated soil	30.66	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
12/05/05	525389	Veh#:c12		
		Petroleum contaminated soil	28.22	TON
		Fuel surcharge landfill	1.00	PCT
		Environmental fee	1.00	LOA
		Ticket total		
12/06/05	525413	Veh#:38		
		Petroleum contaminated soil	29.76	TON
		Environmental fee	1.00	LOA
		Ticket total		
12/06/05	525419	Veh#:3		
		Petroleum contaminated soil	36.02	TON

Service Location: 740-508083 Anderson Environmental: 406 Pine St: Kelso Wa 98626-2311				
Date	Ticket	Description	Quantity	U/M
		Environmental fee	1.00	LOA
		Ticket total		
12/06/05	525445	Veh#:38		
		Petroleum contaminated soil	35.03	TON
		Environmental fee	1.00	LOA
		Ticket total		
12/06/05	525448	Veh#:3		
		Petroleum contaminated soil	34.90	TON
		Environmental fee	1.00	LOA
		Ticket total		
12/07/05	525492	Veh#:38		
		Petroleum contaminated soil	29.60	TON
		Environmental fee	1.00	LOA
		Ticket total		
2/07/05	525497	Veh#:3		
		Petroleum contaminated soil	32.16	TON
		Environmental fee	1.00	LOA
		Ticket total		
2/07/05	525516	Veh#:38		
		Petroleum contaminated soil	33.94	TON
		Environmental fee	1.00	LOA
		Ticket total		
12/07/05	525523	Veh#:3		
		Petroleum contaminated soil	28.69	TON
		Environmental fee	1.00	LOA
		Ticket total		
12/07/05	525541	Veh#:38		
		Petroleum contaminated soil	31.27	TON
		Environmental fee	1.00	LOA
		Ticket total		
12/07/05	525547	Veh#:3		
		Petroleum contaminated soil	30.97	TON
		Environmental fee	1.00	LOA
		Ticket total		
12/28/05	526566	Veh#:01		
		Petroleum contaminated soil	29.55	TON
		Environmental fee	1.00	LOA
		Ticket total		
12/28/05	526567	Veh#:83		
		Petroleum contaminated soil	31.44	TON
		Environmental fee	1.00	LOA
		Ticket total		
12/28/05	526569	Veh#:8		
		Petroleum contaminated soil	31.05	TON
		Environmental fee	1.00	LOA
		Ticket total		
12/29/05	526618	Veh#:38		
		Petroleum contaminated soil	31.84	TON
		Environmental fee	1.00	LOA
		Ticket total		
12/29/05	526621	Veh#:83		
		Petroleum contaminated soil	33.09	TON
		Environmental fee	1.00	LOA
		Ticket total		
12/29/05	526640	Veh#:38		
		Petroleum contaminated soil	30.72	TON
		Environmental fee	1.00	LOA
		Ticket total		

WASTE MANAGEMENT

GREATER WENATCHEE LANDFILL
PO BOX 2963
WENATCHEE, WA 98807-2963

Account Number:	740-0508083-1048-1
Invoice Date:	01/01/2006
Invoice Number:	0012981-1048-5
Due Date:	1/31/2006
WM ezPay Account ID:	00007-22539-15007

Service Location: 740-508083 Anderson Environmental: 406 Pine St. Kelso Wa 98626-2311

Date	Ticket	Description	Quantity	U/M	Rate
12/29/05	526645	Veh#:83			
		Petroleum contaminated soil	29.29	TON	
		Environmental fee	1.00	LOA	
		Ticket total			
12/29/05	526664	Veh#:38			
		Petroleum contaminated soil	30.81	TON	
		Environmental fee	1.00	LOA	
		Ticket total			
12/29/05	526668	Veh#:83			
		Petroleum contaminated soil	29.11	TON	
		Environmental fee	1.00	LOA	
		Ticket total			
		Late payment fee			

Total Current Charges

88.32 / tons

APPENDIX F

WELL DECOMMISSIONING AND INSTALLATION REPORT

Daily Drill Log

HOLT DRILLING, Inc.

Commercial, Environmental and Geotechnical Drilling

Date 1-26-06 Weather _____ Holt Job # 06027

Client Golder Associates Client Job # 033 1335.002

Job Description _____

City Moses Lake State WA County Grant

Boring #	Drilling Method	Total Depth	Soft	Hard	Extra Samples	Boring #	Drilling Method	Total Depth	Soft	Hard	Extra Samples
1. MW-19	4" HSA	13	13			7.					
2.						8.					
3.						9.					
4.						10.					
5.						11.					
6.						12.					

Materials	Size	Type 5'	Type 10'	Type 20'
P.V.C. Screen	2" .020		1	
P.V.C. Blank	2"		1	
End Plugs	1			
Caps	1			
Monument-Flush	1			
Monument-Stickup				
Sand Colo.	6			
Bentonite Chip	1			
Bentonite Powder				
Pellets				
Cement				
Jet Set	1/2			
Concrete Mix	1			
Drum New				
Drum Used				
Lime				
Weight Material				
Grout				
Sampler Liners				
Shelby Tubes				
Other				
Time	Hours			
Hourly				
Standby				
Downtime				
Pressure Washer	Yes No			
Tyvek	Yes No			
Crew-Name	**Hours**	OT		
Dave				
~~Al~~				
Miguel				

6:30-10:00 Shop
10:00-2:00 Mob
2:00-2:15 Set up
2:15-5:00 Drill / install / patch / clean up
5:00-5:15 Travel to hotel

well # ALL 965

Comments:

Driller Signature Paul Tucker

Client Signature Pat V. Middleton

PO Box 1890 • Milton, WA 98354 • (253) 845-7448 • FAX (253) 770-1420

83 5200

RECORD OF BOREHOLE MW-19

SHEET 1 of 1

PROJECT: Moses Lake MF
PROJECT NUMBER: 033-1335-004 003
LOCATION:

DRILLING METHOD: HSA
DRILLING DATE: 01/26/06
DRILL RIG: Mobile B-59

DATUM:
AZIMUTH: N/A
COORDINATES: not surveyed

ELEVATION:
INCLINATION: -90

DEPTH (ft)	BORING METHOD	SOIL PROFILE: DESCRIPTION	USCS	GRAPHIC LOG	ELEV / DEPTH (ft)	SAMPLES: NUMBER	TYPE	BLOWS per 6 in (140 lb hammer 30 inch drop)	N	REC / ATT	PENETRATION RESISTANCE BLOWS / ft (10 20 30 40) / WATER CONTENT (PERCENT) W_p W W_l	NOTES WATER LEVELS GRAPHIC
0	HSA, 4.25" inner diameter, 8" outer diameter	0.0 - 1.0 Loose, light brown, silty GRAVEL damp No petroleum odors.										Flush-Mount Lid
		1.0 - 4.5 Loose dark brown, coarse SAND trace silt moist No petroleum odors.			1.0							Cement Grout
												Bentonite
						1	GRAB			1.0		10-20 Silica Sand (Oglebay Norton) Blank PVC = 0.75' - 3'
5		4.5 - 9.0 Loose, nonstratified, brownish gray to dark olive brown, sandy SILT, well sorted. No petroleum odor. PID = 0.0 ppm			4.5	2	SS	2-5-3	8	1.0 / 1.5		2" diameter/10-slot screen = 3'-13'
						3	GRAB			1.0		10-20 Silica Sand (Oglebay Norton)
10		9.0 - 11.0 Hard, light brown, sandy CLAY moist. Thin lenses of whitish stratified very fine sand No petroleum odors. PID = 0.2 ppm			9.0	4	SS	25-30-47	>50	1.4 / 1.5	>>	
		11.0 - 13.0 Compact, dark brown to brown, gravely SAND trace silt to gravelly sandy SILT, wet			11.0							
		13.0 - 14.5 Hard. CLAYEY SILT or SILTY CLAY, trace sand, moist. No petroleum odor. PID = 0.0 ppm			13.0			9-30-35	>50	1.5	>>	Sluffed back in hole
15		Boring completed at 14.5 ft.			14.5							
20												

ATD

DRILLING CONTRACTOR: Holt Drilling
DRILLER: Dave, Miguel

LOGGED: P. VanMiddlesworth
CHECKED:
DATE:

Golder Associates

BOREHOLE RECORD 033-1335-004.GPJ GLDR_WA.GDT 3/1/06

Daily Drill Log

HOLT DRILLING, Inc.

Commercial, Environmental and Geotechnical Drilling

Date 1-27-06 Weather _____ Holt Job # 06027 Cont.

Client Golder Associates Client Job # 033133 5.002

Job Description _____

City Moses Lake State WA County Grant

Boring #	Drilling Method	Total Depth	Soft	Hard	Extra Samples	Boring #	Drilling Method	Total Depth	Soft	Hard	Extra Samples
1.						7.					
2.						8.					
3.						9.					
4.						10.					
5.						11.					
6.						12.					

Materials	Size	Type 5'	Type 10'	Type 20'
P.V.C. Screen				
P.V.C. Blank				
End Plugs				
Caps				
Monument-Flush	1			
Monument-Stickup				
Sand Colo.				
Bentonite Chip	½			
Bentonite Powder				
Pellets				
Cement	5			
Jet Set	½			
Concrete Mix				
Drum New				
Drum Used				
Lime				
Weight Material				
Grout				
Sampler Liners				
Shelby Tubes				
Other				
Time	Hours			
Hourly				
Standby				
Downtime				
Pressure Washer	Yes No			
Tyvek	Yes No			
Crew-Name	**Hours**	OT		
Dave				
Miguel				

7:00 - 7:30 Travel
7:30 - 9:00 Fix well / Abandon well
9:00 - 10:00 Tow truck
10:00 - De mob

~~MW~~ MW-18

Comments:

Driller Signature David Fulton

Client Signature Pat VanMiddlesworth

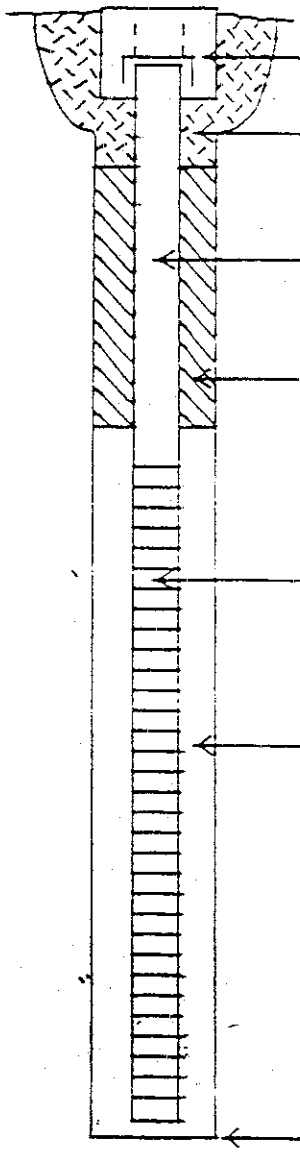
PO Box 1890 • Milton, WA 98354 • (253) 845-7448 • FAX (253) 770-1420

HOLT DRILLING, INC.

Resource Protection Well Report

Project Name: Maint. Facility
Well Identification #: ALL 965
Drilling Method: 4" HSA
Driller: Dave Puckett
License #: 2769 T

Date: 1-26-06
County: ~~Clark~~ Grant SW ¼ SE ¼
Section: 14 T 19N R 28E
Street Address: 835 E. Penn St.
Start Card: R66787
Consulting Firm: Golder Associates

AS-BUILT	WELL DATA	FORMATION DESCRIPTION
	MONUMENT TYPE: Flush CONCRETE SURFACE SEAL: 1' ft. PVC BLANK: 2" x 3' BACKFIL: 1' ft. TYPE: Bentonite hdeplug PVC SCREEN: 2" x 10' SLOT SIZE: .020 TYPE: PVC GRAVEL PACK: 11 ft. MATERIAL: 10x20 Sand WELL DEPTH: 13.8'	0 - 2' ft. Gravel Top Fill 2' - 5' ft. Sand and gravel 5 - 13 ft. Water @ 8' Silty Sand and gravel - ft. - ft.

REMARKS

Signature: David Puckett

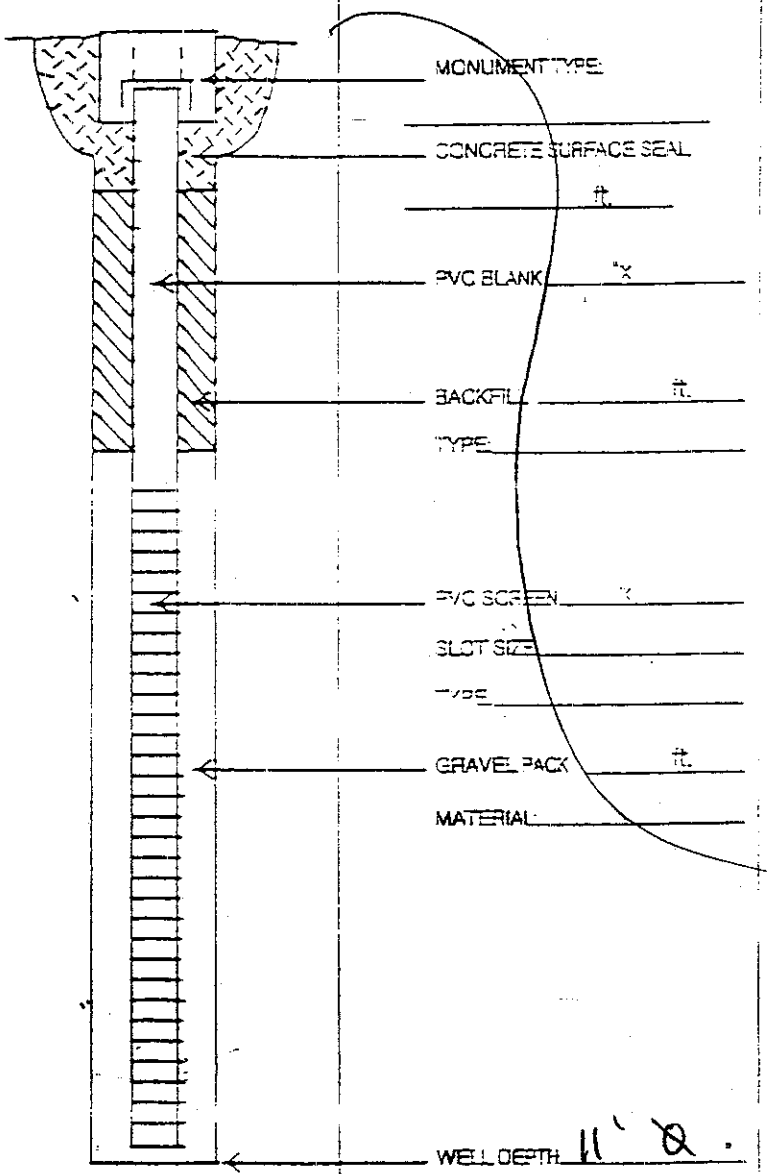
HOLT DRILLING, INC.

Resource Protection Well Report

Project Name Maint. Facility
Well Identification # MW-18
Drilling Method N/A
Driller Dave Puckett
License # 2769T

Date 1-27-06
County Grant SW ¼ SE ¼
Section 14 T 19N R 28E
Street Address 835 E. Penn St.
Start Card # A0860348
Consulting Firm Golder Associates

AS-BUILT | WELL DATA | FORMATION DESCRIPTION



MONUMENT TYPE:
CONCRETE SURFACE SEAL ft.
PVC BLANK "x"
BACKFILL ft.
TYPE:
PVC SCREEN "x"
SLOT SIZE:
TYPE:
GRAVEL PACK ft.
MATERIAL:
WELL DEPTH 11' 0".

0 - ft.
- ft.
- ft.
- ft.
- ft.

REMARKS Abandoned 2" monitoring well # MW-18 Filled from bottom to surface with bentonite. Cut below ground level Concrete patch.

Signature [signature]

APPENDIX G

CONSTRUCTION QUALITY ASSURANCE REPORT

Golder Associates Inc.

18300 NE Union Hill Road, Suite 200
Redmond, WA USA 98052-3333
Telephone (425) 883-0777
Fax (425) 882-5498
www.golder.com

Golder Associates

RECEIVED
JUN 2 2006
DEPARTMENT OF ECOLOGY
EASTERN REGION

APPENDIX G

CONSTRUCTION QUALITY ASSURANCE REPORT
CITY OF MOSES LAKE MAINTENANCE FACILITY CLEANUP ACTION
MOSES LAKE, WASHINGTON

Submitted to

City of Moses Lake
321 South Balsam Street
Moses Lake, Washington 98837

Submitted by

Golder Associates Inc.
18300 NE Union Hill Road, Suite 200
Redmond, Washington 98052

Steven Van Shaar
Staff Engineer

Frank S. Shuri, P.E.
Associate Engineer

June 20, 2006

033-1335-004.003

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Figure 1 Vicinity Map
Figure 2 Remediation Areas

LIST OF ATTACHMENTS

Attachment A Density Testing Summary
Attachment B Concrete Testing Results
Attachment C Record Drawings

1.0 INTRODUCTION

Golder Associates Inc. (Golder), under contract to City of Moses Lake (City), performed construction quality assurance (CQA) observation and testing during the cleanup action at the City of Moses Lake Maintenance Facility. The facility is located at 819 Penn Street in Moses Lake, Washington. This report is issued as a supplement to the Cleanup Action Report (Golder 2006).

The cleanup action plan was produced by the Washington State Department of Ecology (WSDOE 2004). Golder produced construction drawings and specifications (Golder 2005b) and an environmental compliance monitoring plan (Golder 2005a) for the cleanup action.

The Contractor for the project was Anderson Environmental Contracting (AEC) of Kelso, Washington. Laboratory testing of concrete and soils and field testing of concrete slump and air content and soil density was performed by Western Pacific Engineering of Moses Lake, Washington under contract to Golder. Golder also provided environmental monitoring during the project consisting of separation of contaminated soil and potentially clean overburden, sampling of soil and groundwater during excavation for analysis to assess or confirm contamination levels, monitoring and groundwater in nearby wells to assess any impacts of the cleanup action, and monitoring and sampling of discharged (treated) groundwater (Golder 2006).

1.1 Report Organization

This report provides a summary of the construction activities and CQA associated with the cleanup action. Project background information is presented in Section 1. A description of the construction activities is presented in Section 2. CQA activities are described in Section 3. Conclusions are presented in Section 4. Data summaries and record drawings are presented in the Appendices to this report. Field notes and reports are contained in the Cleanup Action Report (Golder 2006).

1.2 Scope of Services

Golder's scope of services consisted of CQA observation and testing associated with the construction aspects of the cleanup action. CQA observations included in this report took place on a full-time basis between September 12 and December 22, 2005. Golder reviewed required Contractor submittals and responded to Contractor's requests for information and change orders. Golder also collected soil samples and reviewed the results of on-site and laboratory testing of soil and concrete.

1.3 Preconstruction Meeting

On September 12, 2005, a pre-construction meeting was held on-site. The meeting was attended by project personnel from the City, AEC, WSDOE, and Golder. Items discussed included the project schedule, health and safety issues, and other topics relevant to the activities of the project.

1.4 Contractor Submittals

Golder reviewed contractor submittals to confirm that materials and personnel associated with the cleanup action met the requirements of the project specifications.

2.0 CONSTRUCTION ACTIVITIES

Physical features referenced in the following sections of this report are shown on the Record Drawings, Attachment C. Photographs of the cleanup action are contained in the Cleanup Action Report (Golder 2006).

2.1 Wells, Underpinning, and Drum Disposal

Two groundwater monitoring wells (MW-11 and MW-16) were de-commissioned prior to excavation. Three soil vapor extraction wells (VE-20, VE-21, and VE-22) were encountered in Area 1 during excavation and were subsequently decommissioned. One groundwater monitoring well (MW-18) was damaged during construction. This well was protected through the remainder of the construction, and then de-commissioned after completion of the project. The monument to MW-15 was damaged during construction, and was replaced at the end of the project. One well (MW-19) was installed after completion of the project. All well decommissioning and installation was performed in accordance with Washington State Department of Ecology (Ecology) requirements, i.e. WAC 173-160.

Excavation was required immediately adjacent to the south wall of the maintenance shop. Steel underpinning piles were installed to support the building wall. The portion of the excavation beneath and adjacent to the building footing was backfilled with controlled-density fill (CDF).

Five drums of RI/FS investigation-derived waste (drill cuttings) were present prior to cleanup. As part of the cleanup action, the drums were emptied, and the contents (soil and water) were mixed with the petroleum-contaminated soils for disposal. The drums were crushed and disposed of with the contaminated soil.

2.2 Temporary Facilities and Controls

Temporary erosion and sediment control measures were implemented on-site, including covering of stockpiles and directing water toward the open excavation. Contamination controls were also practiced, including spill kits, sorbent pads, traffic management, and equipment de-contamination.

Groundwater was pumped from the excavation into storage tanks for settlement. The water was then run through a granulated activated carbon vessel prior to final discharge. During excavation at Area 1 and the early stage of excavation at Area 2, this treated water was discharged to the sanitary sewer in conformance with the City of Moses Lake permit requirements. During the later stage of excavation at Area 2, an alternative discharge location had to be identified due to the volume of water flowing into the excavation and the influent limitation set for the sanitary sewer. The discharge point for treated excavation water was subsequently switched to the wetland north of Penn Street, requiring a temporary pipeline crossing to be installed under Penn Street.

The Contractor installed and maintained orange safety fencing around open excavations.

2.3 Demolition

A fence running north-south through Area 2 was demolished, with the chain link fabric salvaged to the city. The wash rack south of the maintenance shop was demolished. A concrete pad at the southwest corner of the maintenance shop was also demolished. Asphalt pavement was demolished as needed for excavation in Area 2.

Demolition debris, with the exception of some asphalt, was disposed of as demolition waste. Some asphalt was disposed of with petroleum-contaminated soil.

Of all the facilities mentioned, only the wash rack was replaced.

2.4 Earthwork

Excavation was performed with a Cat 320C excavator. Approximately 13,500 tons of soil were hauled off-site for disposal at Greater Wenatchee Regional Landfill. Because the existing soils at the site had a high silt content, the subgrade below the groundwater table became unsuitable for supporting construction equipment after excavation of contaminated soils. The subgrade was therefore stabilized either by using quarry spalls covered by geotextile or geotextile covered by imported sand. Backfill was spread using the excavator, a front end loader, and/or a Cat D6 dozer. To support the placement equipment, the first lift of backfill was placed approximately 24 inches thick with compaction by the spreading equipment only. Subsequent lifts were placed approximately 12 inches thick and compacted with a vibratory sheepsfoot roller.

The following sources of backfill material were used: overburden soil from the site, the City stockpile, quarry spalls, CDF, and imported sand. Minor sources of general backfill were drain rock and crushed surfacing.

Overburden soil consisted of brown silty sand with some gravel. Overburden was excavated and stockpiled prior to removal of petroleum-contaminated soils. Overburden was used as backfill in Excavation Area 2 only. Approximately 130 cubic yards were placed.

City stockpile material was taken from the stockpile north of Penn Street. The material consisted of reddish brown sand and gravel with little silt. City stockpile was used as backfill in both Excavation Areas. Approximately 3,500 cubic yards were placed.

Quarry spalls consisted of gray, angular crushed stone ranging in size from 4 to 6 inches. The spalls were supplied by Desert Rock Excavation from their local production facility. Spalls were used in both as backfill Excavation Areas. Approximately 400 tons were placed.

Controlled-density fill consisted of a brown weak-concrete mix with pea-size aggregate. The CDF was supplied by AAA Readymix from a local production facility. CDF was used as backfill beneath and adjacent to the footing of the maintenance shop building at Excavation Area 1. Approximately 20 cubic yards were placed.

Imported sand consisted of light brown medium-to-coarse sand with a trace of silt. The material was supplied by Desert Rock Excavation. The material is mined and processed at their facility on Road 4 NE. The material is the "reject" material from a screening and crushing process. The material was used as backfill in both Excavation Areas. Approximately 7,600 tons were placed.

On-site stockpiles were covered to maintain proper moisture and prevent erosion. Stockpile areas were graded to match adjacent grades. The entire City stockpile was depleted.

2.5 Utilities

The wash rack catch basin and drain line in Area 1 was removed and replaced. A portion of the gas line between the parks building and the maintenance shop was removed and replaced. The elbow joint on the water line east of the sweeper pit was removed and replaced, including a pre-cast thrust

block supported by compacted fill. A portion of the fence at the north end of Area 2 was removed and replaced. A telephone line in Penn Street was damaged during excavation of contaminated soils and was repaired.

A 6-inch diameter perforated polyethylene subsurface drain pipe approximately 2 to 3 feet below ground surface west of the demolished north-south fence was removed without replacement. A similar perforated pipe east of the demolished fence was removed and replaced in Area 2. A new perforated pipe was installed in Excavation Area 1, as shown on the record drawings. Flexible 6-inch perforated polyethylene pipe was used for the new and replacement drains. These pipes were bedded in the backfill materials. The top and sides of the pipe were covered with a 4-inch-thick layer of 1-1/2 inch drain rock. The drain rock was then covered with geotextile. The remainder of the trench was backfilled with general fill materials. The backfill was typically placed in 12-inch lifts and compacted by bucket tamping with the excavator. The drains installed in Area 2 also included tracer wire placed over the geotextile and access ports to the end of the wire. The work was performed in general accordance with the drawings, specifications, and recommendations of the Engineer.

Because contamination extended beneath the maintenance shop building beyond the limits that could be excavated without endangering the structural integrity of the building, an interceptor drain was installed to minimize the potential for the remediated area from being recontaminated by the remaining impacted soil. The upstream ends of the drain consisted of perforated stub-outs embedded into the north wall of the excavation, i.e., under the building, where samples had been collected containing levels of contamination above cleanup levels. The perforated stub-outs were surrounded by a zone of drain rock. The stubs connected to a tightline manifold, which drains into the storm drain upstream of the oil-water separator located north of Penn Street. A cleanout port and a water sampling port were installed on the drain line.

A catch basin north of the sweeper pit in Area 2 was de-commissioned in place by filling it with backfill soil. The pipe servicing the catch basin had been encountered during excavation of contaminated soils, and was observed to be full of soil and ash. Field screening of the soil and ash indicated that an analytical sample was not warranted.

2.6 Bases, Surface Treatments, and Pavements

All disturbed areas were resurfaced with crushed rock. The crushed rock was typically base course (1-1/4 inch minus) although a limited quantity of top course (3/4 inch minus) was used in Area 1. Asphalt pavement that had been removed was not replaced. Crushed rock was spread by backblading or with a grader in a single 4 inch lift and compacted with a smooth drum vibratory roller. Approximately 49,000 square feet of crushed rock was placed.

2.7 Cast-in-place Concrete

Reinforced cast-in-place concrete was used to construct the wash rack replacement. Subgrade for the slab was crushed surfacing top course. The concrete was end dumped and spread by hand. No vibration was necessary. Demolition tape was set up to keep traffic off the slab during the cure period.

3.0 CONSTRUCTION QUALITY ASSURANCE ACTIVITIES

3.1 Wells, Underpinning, and Drum Disposal

Golder observed well de-commissioning and installation to verify that the procedures were in accordance with WAC 173-160-460. All well installation and de-commissioning services were provided by licensed resource-protection well drillers.

Golder performed refusal testing on the installed underpinning piles. All piles met the refusal criteria of less than 1 inch of additional penetration during 1 minute of driving.

Emptying, crushing, and loading of drums was observed.

3.2 Temporary Facilities and Controls

Golder provided periodic inspection of erosion and sediment control measures, including inspection at the access points to city streets.

Groundwater was sampled for analysis in the laboratory. The lab analysis included petroleum and arsenic contamination for all samples and bromodichloromethane on a limited basis. Discharge from the water treatment system was likewise sampled and sent to the lab for analysis. Discharge rates were computed and visual/olfactory inspection of discharge was performed periodically (typically weekly). Results of the lab analyses are presented in the Cleanup Action Report (Golder 2006).

Golder observed installation of safety fencing.

3.3 Demolition

Golder observed demolition activities, including loading for disposal.

3.4 Earthwork

Golder observed excavation activities and designated excavated soil for disposal or stockpiling. Golder inspected subgrade and cooperated with the Contractor to establish procedures and materials necessary to stabilize the subgrade. Golder reviewed the Contractor's submittals for fill and geotextiles. Five composite samples from the overburden material were analyzed in the lab to confirm that the overburden soil met cleanup goals and could be used for backfill; results of these analyses are presented in the Cleanup Action Report (Golder 2006). Golder waived the requirement of contamination testing for imported sand based on the very low fines content (less than 2% by dry weight) and because the soil was from a known source.

Western Pacific provided density testing of backfill using a nuclear density-moisture gage; results of this testing are presented in Attachment A and indicate that the soil compacted with the sheepsfoot roller met the specified criterion of at least 90% of modified Proctor density (ASTM D1557). However, because of the wet conditions described in section 2.4, the first lift of backfill was placed in a thicker lift than specified (24 inches vs. 12 inches) and could not be compacted by the sheepsfoot roller. Consequently, the degree of compaction of this material may be lower than specified, and if future development of this site includes settlement-sensitive structures, appropriate geotechnical evaluations should be performed.

Golder also observed stockpile conditions and grading of depleted stockpile areas.

3.5 Utilities

For city-owned utilities, Golder reviewed contractor submittals, observed installation, documented as-built conditions, and observed backfilling. The water line repair was also inspected by the City for compliance with cleanliness and pressure-tightness requirements. Inspection of the repaired gas line was provided by the City. Golder and the City observed replacement of the fence at the north end of Area 2.

Golder observed the installation of perforated drains, documented as-built conditions, and observed backfilling. The work was performed in general accordance with the drawings, specifications, and recommendations of the Engineer.

Golder observed installation of the interceptor drain from the stub-outs downstream past the sampling ports. The remainder was inspected by the City prior to burial.

3.6 Bases, Surface Treatments, and Pavements

Golder observed placement and compaction of crushed surfacing. Density testing requirements were waived at the request of the City due to the small thickness and coarse-grained nature of this layer.

3.7 Cast-in-place Concrete

Golder reviewed submittals for steel reinforcement and concrete materials and observed placement of reinforcement and concrete. Western Pacific Engineering performed slump, air content, and compressive strength tests on the concrete, in accordance with the specifications. The results of this testing are presented in Attachment B and indicate that the concrete mix met all specification requirements except for air entrainment, which was 2.8% instead of 4 to 8%. However, this variation was considered acceptable because of the short design life of the replacement wash pad.

4.0 CONCLUSION

Golder observed the activities described in this report associated with the Cleanup Action at the City of Moses Lake Maintenance Facility in Moses Lake, Washington. Based on these observations and the results of testing reported herein, it is Golder's opinion that this Cleanup Action has been performed in substantial compliance with the Project Documents.

This report has been prepared for the exclusive use of the City of Moses Lake for specific application to the Cleanup Action at the City of Moses Lake Maintenance Facility. This report has been prepared in accordance with the project documents and locally accepted engineering practice to provide information for the constructed project. There are possible variations in the conditions between and adjacent to our observed and tested areas.

5.0 REFERENCES

Golder Associates, 2006. *Draft Cleanup Action Report, City of Moses Lake Maintenance Facility, Moses Lake, Washington*. Dated March 2006.

Golder Associates, 2005a. *Compliance Monitoring Plan, City of Moses Lake Maintenance Facility, Moses Lake, Washington*. Dated May 26.

Golder Associates, 2005b. *Engineering Design Report, City of Moses Lake Maintenance Facility, Moses Lake, Washington*. Dated June 10.

Washington State Department of Ecology, 2004 *Cleanup Action Plan Moses Lake City Maintenance Facility Moses Lake, WA*. Toxics Cleanup Program, Eastern Regional Office, Spokane.

FIGURES

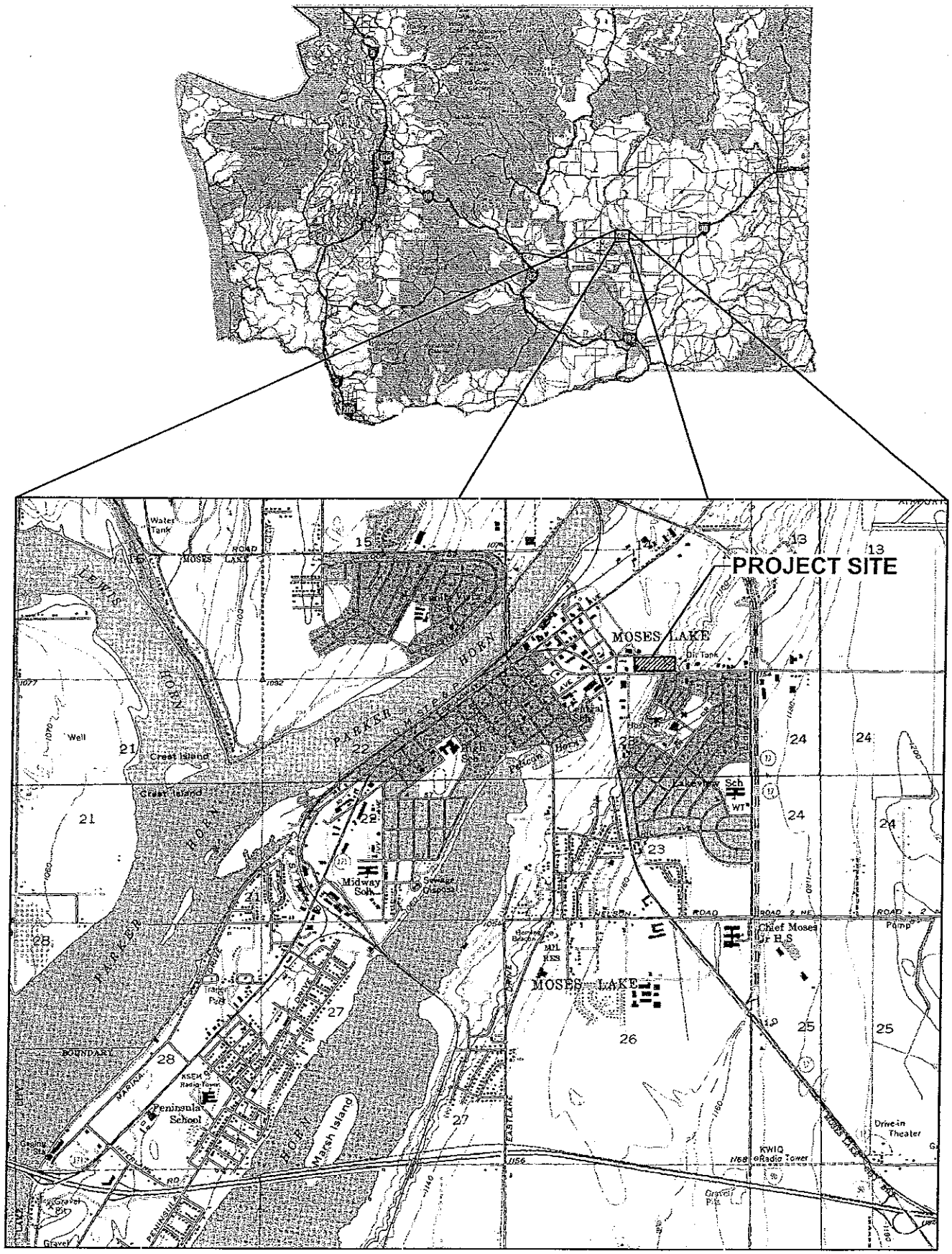

FIGURE 1

VICINITY MAP

MOSES LAKE/MAINTENANCE FACILITY RA

Golder Associates

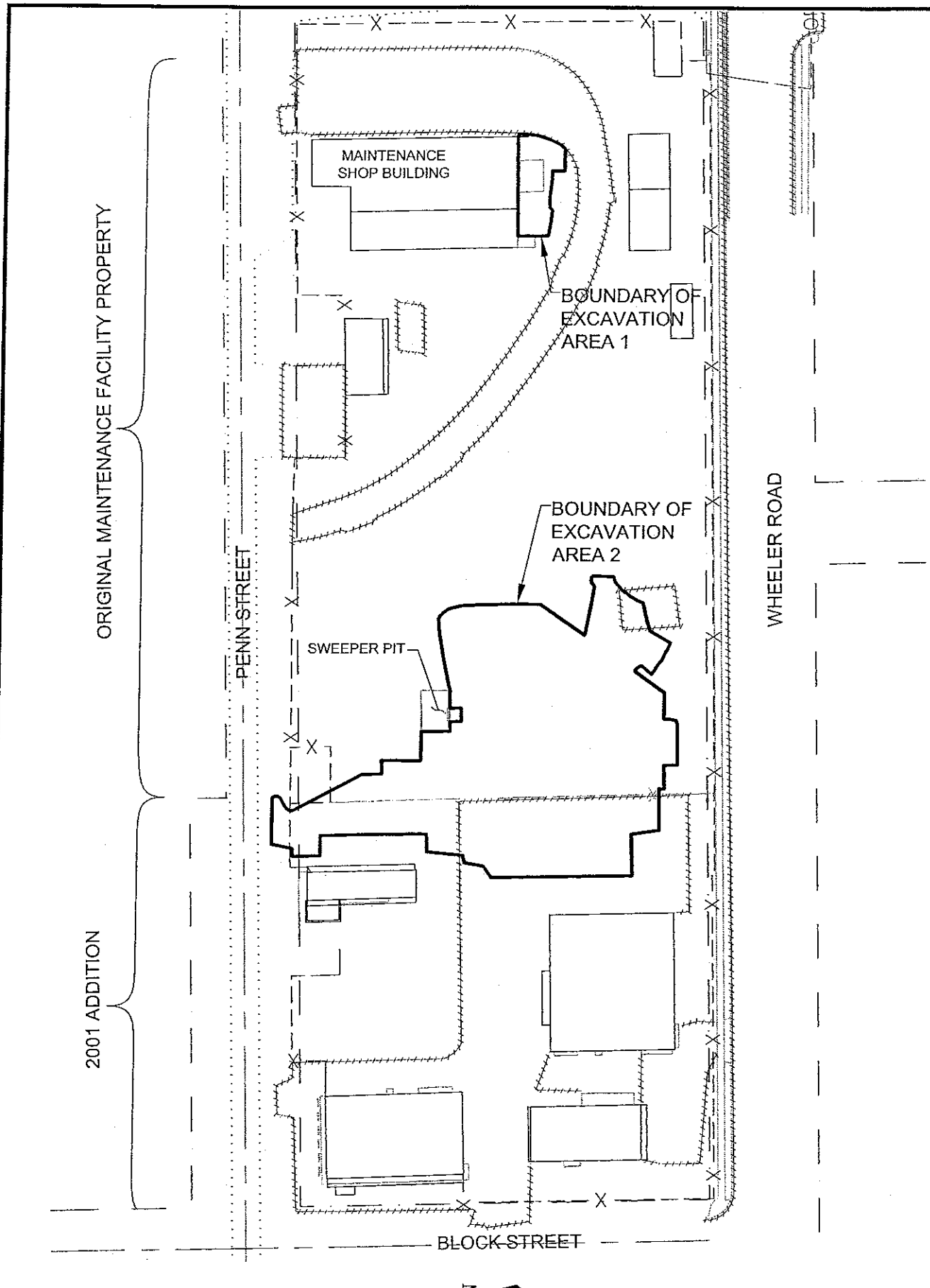

FIGURE **2**

REMEDIATION AREAS

MOSES LAKE/MAINTENANCE FACILITY RA

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Golder Associates

ATTACHMENT A

DENSITY TESTING SUMMARY

FIELD DENSITY TESTING SUMMARY

General Fill
Maintenance Facility Cleanup Action
Moses Lake, Washington

Test Information					Proctor Information			Field Density Information				
WPE Report #	Test #	Date	Location	Depth below Finished Grade (ft)	Max Dry Density (pcf)	Optimum Moisture (%)	Minimum Compaction (%)	Dry Density (pcf)	Moisture (%)	Wet Density (pcf)	Compaction (%)	Pass/Fail
1	1	10/13/2005	Ex 2, 65N, 88E	2	131.5	12.7	90	124.4	4.5	130.0	95	Pass
2	1	10/14/2005	Ex 1, 20S, 20W	3	136.5	unk	95	131.0	6.5	139.5	96	Pass
2	2	10/14/2005	Ex 1, 12S, 55W	3	131.5	12.7	90	124.8	8.0	134.8	95	Pass
2	3	10/14/2005	Ex 2, 60N, 105E	2	131.5	12.7	90	125.8	3.8	130.6	96	Pass
2	4	10/14/2005	Ex 2, 25N, 50E	2	131.5	12.7	90	118.9	3.0	122.5	90	Pass
3	1	10/14/2005	Ex 1, 20S, 35W	1	136.5	unk	95	134.3	5.7	142.0	98	Pass
4	1	10/17/2005	Ex 1, 9S, 16W	0	131.5	12.7	90	121.3	4.3	126.5	92	Pass
5	1	10/20/2005	Ex 2, 55N, 100E	0	136.5	unk	90	134.6	9.0	146.7	99	Pass
5	2	10/20/2005	Ex 2, 110N, 90E	0	136.5	unk	90	134.4	8.1	145.3	98	Pass
5	3	10/20/2005	Ex 2, 140N, 125E	0	136.5	unk	90	132.6	8.8	144.3	97	Pass
6	1	10/25/2005	Ex 2, 125N, 5W	0	131.5	12.7	90	119.5	4.6	125.0	91	Pass
6	2	10/25/2005	Ex 2, 160N, 20E	0	131.5	12.7	90	118.3	5.7	125.0	90	Pass
6	3	10/25/2005	Ex 2, 50N, 10W	0	136.5	unk	90	122.0	7.0	130.5	89	Fail
6	4	10/25/2005	Ex 2, 70N, 20E	0	136.5	unk	90	132.4	6.0	140.3	97	Pass
6	5	10/25/2005	Ex 2, 110N, 55E	0	136.5	unk	90	128.9	5.6	136.1	94	Pass
7	1	10/26/2005	Ex 2, 165N, 25E	0	136.5	unk	90	131.9	5.8	139.6	97	Pass
7	2	10/26/2005	Ex 2, 140N, 30W	0	136.5	unk	90	131.8	6.7	140.6	97	Pass
7	3	10/26/2005	Ex 2, 115N, 5E	0	136.5	unk	90	127.1	6.7	135.6	93	Pass
8	1	10/31/2005	Ex 2, 120N, 10W	0	136.5	unk	90	134.5	7.3	144.3	99	Pass
8	2	10/31/2005	Ex 2, 70N, 20W	0	136.5	unk	90	136.3	7.9	147.1	100	Pass
8	3	10/31/2005	Ex 2, 85N, 55W	0	136.5	unk	90	132.2	10.9	146.6	97	Pass
9	1	12/7/2005	Ex 2, 30N, 110 E	0	131.5	12.7	90	116.0	6.6	123.7	88	Fail
9	2	12/7/2005	Ex 2, 50N, 120E	0	136.5	unk	90	130.9	12.2	146.9	96	Pass
9	3	12/7/2005	Ex 2, 15N, 80E	0	136.5	unk	90	125.2	8.1	135.3	92	Pass
10	1	12/8/2005	Ex 2, 210N, 10W	0	131.5	12.7	90	127.3	8.0	137.5	97	Pass
10	2	12/8/2005	Ex 2, 250 N, 15W	0	131.5	12.7	90	118.4	6.6	126.2	90	Pass
10	3	12/8/2005	Ex 2, 260N, 5W	0	131.5	12.7	90	118.7	6.9	126.9	90	Pass
10	4	12/8/2005	Ex 2, 30N, 0E	0	136.5	unk	90	123.8	9.0	134.9	91	Pass
10	5	12/8/2005	Ex 2, 25N, 25W	0	136.5	unk	90	126.6	9.9	139.1	93	Pass
11	1	12/13/2005	Ex 2, 230N, 15W	0	136.5	unk	90	117.4	6.6	125.1	86	Fail
11	2	12/13/2005	Ex 2, 180N, 15W	0	136.5	unk	90	120.1	8.7	130.5	88	Fail
12	1	12/19/2005	Ex 2, 190N, 15W	2	131.5	12.7	90	122.1	5.9	129.3	93	Pass
12	2	12/19/2005	Ex 2, 190N, 15W	1	142.0	unk	90	129.6	3.6	134.3	91	Pass
12	3	12/19/2005	Ex 2, 190N, 15W	0	142.0	unk	90	130.5	4.1	135.9	92	Pass
12	4	12/19/2005	Ex 2, 190N, 6E	0	142.0	unk	90	132.3	4.7	138.5	93	Pass

ATTACHMENT B

CONCRETE TESTING RESULTS

WESTERN PACIFIC ENGINEERING, INC.

NOV 2 8 2005

PIONEER PROFESSIONAL CENTER
1328 E. HUNTER PLACE
MOSES LAKE, WA 98837
(509) 765 - 1023 FAX (509) 765 – 1298

MOSES LAKE
ELLENSBURG
ELLENSBURG
(509) 925 - 4164

Golder Associates

ENGINEERS
PLANNERS
SURVEYORS
MATERIAL TESTERS

rskinner@wpeinc biz

CONCRETE COMPRESSION TEST REPORT

REPORT TO: Golder Associates, Inc
18300NE Union Hill Road
Suite 200
Redmond, WA 98052
Attn: Ted Norton

PLACEMENT DATE: 10/19/05
PROJECT NUMBER: 05668
REPORT NUMBER: 01

PROJECT: City of Moses Lake Maintenance Facility Remedial Action Project
CONTRACTOR:
PLACEMENT LOCATION: Maintenance shop, south side of building – concrete placed in the southwest portion of slab
REMARKS:
WEATHER: Cloudy, some sprinkles and wind **AIR TEMP, °F:** 54
CONCRETE SUPPLIER: AAA Readymix **MIX DESIGN:** 6 Sack
DESIGN STRENGTH: 4000 psi @ 28 Days **DESIGN SLUMP:**

	Truck # 1	Truck # 2	Truck # 3
Yield Cubic Yards	9.0		
Total Water in Gallons	208		
Water, Gallons per Cubic Yard	23.11		
Ticket Number	Batch 215&216		
Additive, AE90: Amount	37oz		
Type of Cement			
Temperature: Concrete, °F	66		
Slump, Inches	2.25"		
Entrained Air, Percent	2.8		
Specimen Numbers	1700 A,C,D, EX		

Specimens Cast By: Robin Dull of Western Pacific Engineering, Inc.

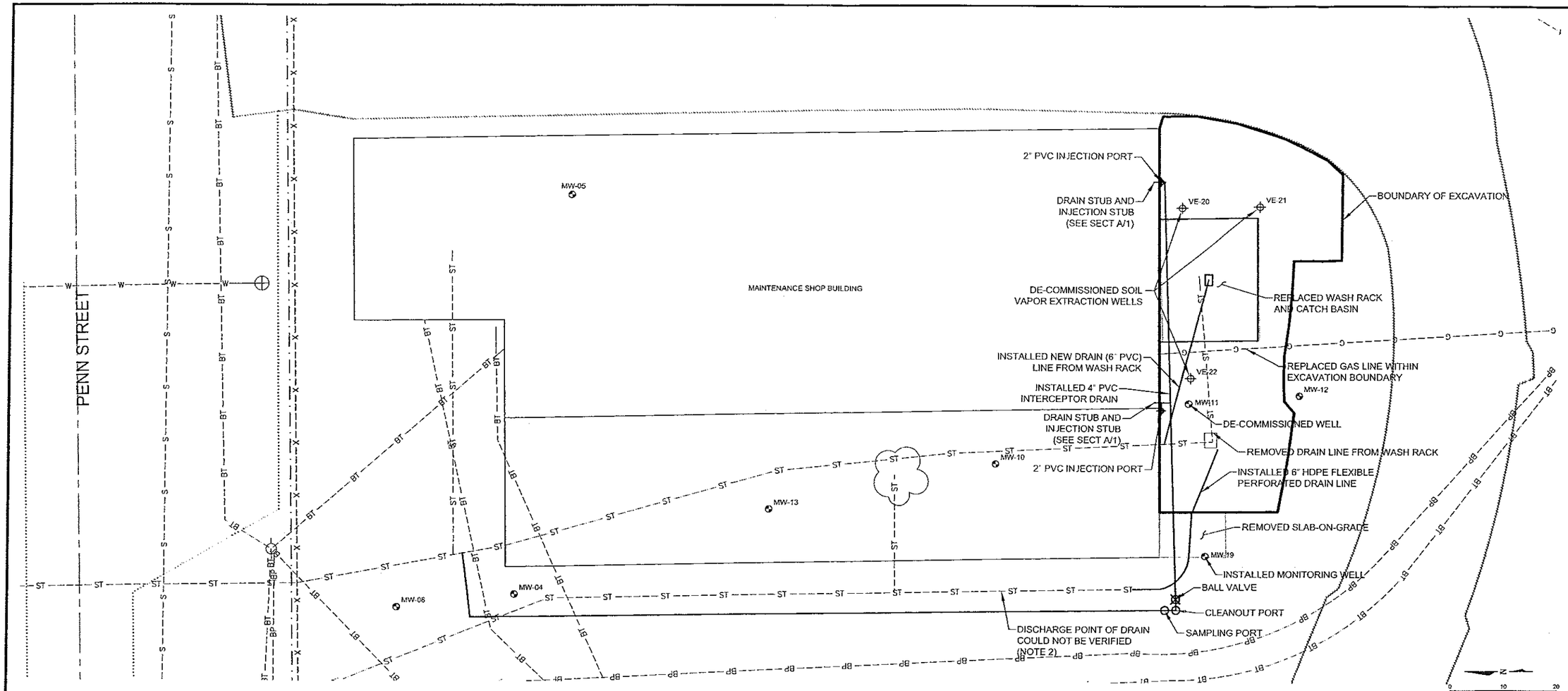
Lab. No.	Fracture Type	Days Cured	Strength in P.S.I.	Date Reported
1700A	C	7	4665	10/26/05
1700C	D	28	5341	11/16/05
1700D	B	28	5636	11/16/05
1700EX				?

Distribution:

Respectfully Submitted: Robin Dull

ATTACHMENT C

RECORD DRAWINGS

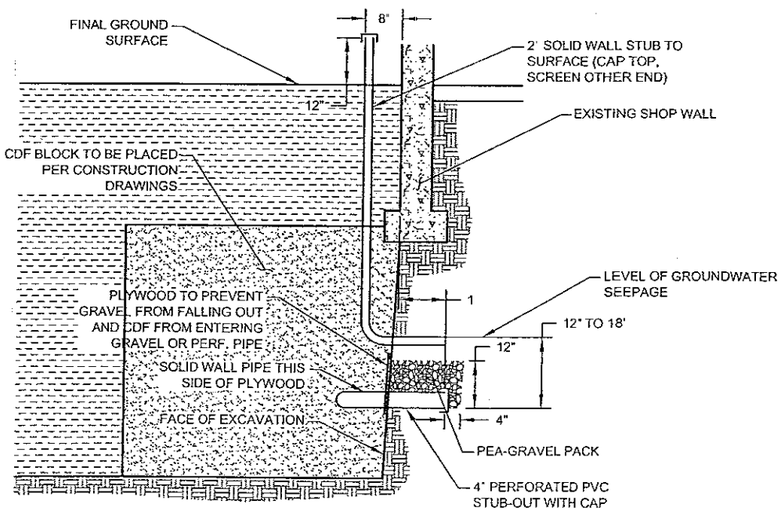


LEGEND

- EDGE OF EX. ASPHALT
- EDGE OF EX. GRAVEL ROAD
- CENTERLINE OF EX. ROAD
- CITY STREET R.O.W.
- EX. FENCE
- EX. BURIED CABLE
- EX. BURIED TELEPHONE
- EX. BURIED POWER
- EX. GAS LINE
- EX. OVERHEAD POWER
- EX. SANITARY SEWER
- EX. STORM SEWER
- EX. WATER LINE
- MW-02 EX. MONITORING WELL
- CP-9 CONTROL POINT

NOTES:

1. BASE MAP PROVIDED BY MUNICIPAL SERVICES DEPT., CITY OF MOSES LAKE, 12/01.
   DATUM: MOSES LAKE LOCAL SITE CALIBRATION USING NAD83 AND NAVD88 AS PUBLISHED BY WSDOT FOR CONTROL
   HORIZONTAL: CENTERLINE OF PENN STREET = N88°50'23"E (MUNICIPAL TRACT 2 = N89°48'E)
   CP-9 = 658,234.2 N 1,947,769.9 E
   VERTICAL: CP-9 = 1064.52 (=1061.65 CITY OF MOSES LAKE ELEVATION USBR DATUM)
2. DYE TESTING WAS ATTMPTED, BUT NO TRACE OF DYE WAS OBSERVED IN PENN STREET MANHOLES (OIL WATER SEPARATOR AND NEXT MANHOLE ON STORM SEWER AND SANITARY SEWER MANHOLE IN FRONT OF OFFICE WERE MONITORED) OR IN THE WETLAND NORTH OF PENN STREET.



A/1 SECTION AT INTERCEPTOR DRAIN
NOT TO SCALE

Golder Associates
GOLDER ASSOCIATES INC.
18300 NE UNION HILL ROAD, SUITE 200
REDMOND, WA USA 98052-3333
TELEPHONE: 425.883.0777
FAX: (425) 882-5498

REV	DATE	DES	RECORD DRAWING REVISION DESCRIPTION	CADD	CHK	FSS
1	2/27/06	SRV		SRV	TJN	RVW

FRANK S. SHERRY — REGISTERED PROFESSIONAL ENGINEER — STATE OF WASHINGTON — 36284 — 2-27-06

PROJECT: MOSES LAKE / MAINTENANCE FACILITY REMEDIAL ACTION

TITLE: RECORD DRAWING, EXCAVATION AREA 1

PROJECT No. 033-1335-004		
FILE No. 0331335002004C01		
REV. 0	SCALE	AS SHOWN
DESIGN	SRV	2/27/06
CADD	SRV	2/27/06
CHECK	TJN	2/27/06
REVIEW	FSS	2/27/06

SHEET 1

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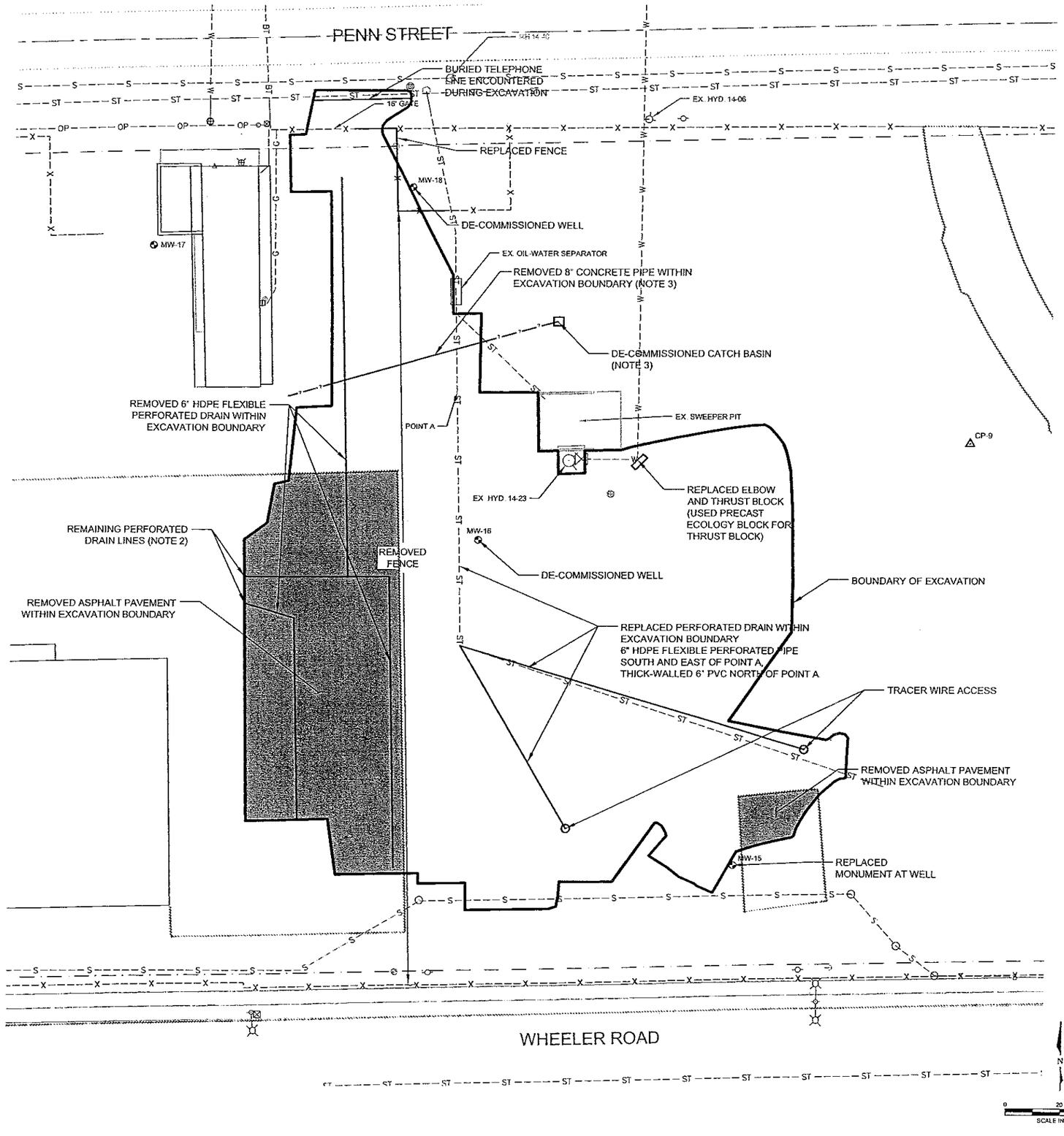

LEGEND

- EDGE OF EX. ASPHALT
- EDGE OF EX. GRAVEL ROAD
- CENTERLINE OF EX. ROAD
- CITY STREET R.O.W.
- X — EX. FENCE
- BC — EX. BURIED CABLE
- BT — EX. BURIED TELEPHONE
- BP — EX. BURIED POWER
- G — EX. GAS LINE
- OP — EX. OVERHEAD POWER
- S — EX. SANITARY SEWER
- ST — EX. STORM SEWER
- W — EX. WATER LINE
- MW-02 EX. MONITORING WELL
- CP-9 CONTROL POINT

NOTES:

1. BASE MAP PROVIDED BY MUNICIPAL SERVICES DEPT., CITY OF MOSES LAKE, 12/01.
   DATUM: MOSES LAKE LOCAL SITE CALIBRATION USING NAD83 AND NAVD88 AS PUBLISHED BY WSDOT FOR CONTROL
   HORIZONTAL: CENTERLINE OF PENN STREET = N88°50'23"E (MUNICIPAL TRACT 2 = N89°48'E)
   CP-9 = 658,234.2 N 1,947,769.9 E
   VERTICAL: CP-9 = 1064.52 (=1061.65 CITY OF MOSES LAKE ELEVATION USBR DATUM)
2. DRAIN LINES WERE NOT REPLACED BECAUSE REMAINING DRAIN LINES DID NOT ACCEPT PONDED WATER. AN ATTEMPT WAS MADE BY CITY PERSONNEL TO CLEAN THE DRAINS FROM THE DOWNSTREM END USING A ROOTER-TYPE TOOL, BUT THE ATTEMPT WAS UNSUCCESSFUL; OPERATORS STATED THAT THE RESPONSE OF THE EQUIPMENT INDICATED THAT THE DRAIN LINE WAS MISSING RATHER THAN CLOGGED
3. CATCH BASIN WAS DE-COMMISSIONED BY FILLING WITH SOIL. PIPE WAS OBSERVED TO BE FULL OF SOIL AND ASH--NO HYDROCARBON ODORS WERE OBSERVED.

Golder Associates
GOLDER ASSOCIATES INC.
18300 NE UNION HILL ROAD, SUITE 200
REDMOND, WA USA 98052-3333
TEL: (425) 883-0777
FAX: (425) 882-5498

REV	DATE	DES	REVISION DESCRIPTION	CADD	CHK
1	5/19/06	SRV	RESPONSE TO DOE COMMENTS	SRV	TJN
0	2/27/06	SRV	RECORD DRAWING	SRV	TJN

FSS

PROFESSIONAL ENGINEER — WILLIAM S. SHERI — WASHINGTON — 21741 — REGISTERED — 2-11-07

PROJECT: MOSES LAKE / MAINTENANCE FACILITY REMEDIAL ACTION

TITLE: RECORD DRAWING, EXCAVATION AREA 2

PROJECT No. 033-1335-004			
FILE No. 03313350020004C01			
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CHECK	TJN	2/27/06	
REVIEW	FSS	2/27/06	

SHEET 2

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