

Healy Power Plant - Unit No. 1
Diesel Emergency Generator
Lube Oil Spill
Clean-Up and Site Characterization Report
Healy, Alaska

Prepared For:

Golden Valley Electric Association, Inc.
P.O. Box 71249
758 Illinois Street
Fairbanks , Alaska 99707

Prepared By:

Stephen R. Rog, C.P.G. & Associates
P.O. Box 112345
Anchorage, Alaska 99511-2345
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INTRODUCTION

This report presents the results of clean-up efforts and site characterization activities for the Golden Valley Electric Association, Inc. (GVEA) Healy Power Plant (HPP)-Unit No. 1 Diesel Emergency Generator (DEG) lube oil spill that occurred on July 28, 1999 in Healy, Alaska. Initial emergency response operations were conducted by HPP personnel at the time of spill discovery. A site reconnaissance with GVEA environmental officer, Ms. Kate Lamal, was conducted on August 4 -5, 1999 and a work plan and proposed schedule was developed for additional clean-up and site characterization activities. In accordance with GVEA procurement procedures, contractual and field schedule arrangements were made and S. R. Rog, C.P.G. & Associates and Inland PetroServices of Fairbanks, AK were engaged to direct and perform the work. Northern Testing Laboratory, Fairbanks, AK was contracted to perform the required analytical testing. Additional field support and equipment services were coordinated with HPP operations and engineering staff. The work plan and schedule was submitted to the ADEC. Additional clean-up and characterization work was conducted from August 10-12, 1999.

D. E. G. Lube Oil Spill - Initial Response Actions

On July 28, 1999 HPP personnel discovered and reported an approximate 400 gallon lube oil spill from the Diesel Emergency Generator (DEG) at the Unit No. 1 coal fired power plant. The DEG is located north of the HPP-Unit No. 1 building and is set within 7 feet of the concrete retaining wall which supports a facility access road. The DEG unit consists of large displacement Electro- Motive- Diesel (EMD) engine and 2.75 MW generator package enclosed in a 10 foot wide by 48 foot long skid mounted steel building, set directly on the ground. The DEG unit weighs in excess of 148,000 pounds. The DEG controls and switch gear are located in a 10 foot by 10 foot auxiliary building located directly west of the DEG unit and is connected with underground cables (PHOTO 1). The DEG is used infrequently, typically when the plant is black started. The DEG was taken out of service after the spill until site conditions were evaluated. The spill was caused by damage to the crankcase drain valve pipe during routine maintenance and cleaning operations in the area between the retaining wall and the DEG (PHOTO 2). Figure 1 shows the location of the DEG and the HPP Unit No. 1 facility.

The lube oil was identified as Chevron Diesel Engine Oil-DELO 6170, SAE 40. This is a severely refined, high grade, relatively non-toxic and insoluble SAE 40 weight lube oil. The MSDS and other applicable product information are included in Appendix A. Based on the damage to the crankcase drain valve, which was reported as a cracked 2-inch pipe nipple, it appears that the lube oil leaked over a 24-48 hour period of time (PHOTO 3). Initial spill volume was estimated at 400 gallons. After reviewing the manufacturers specifications, HPP-DEG maintenance records and conducting measurements of the retained volume of oil in the DEG crankcase, HPP engineering staff has revised and decreased the spill estimate to approximately 375 gallons. The lube oil appears relatively clean, with a brown to honey-like color and contained minimal crankcase sludge.

In addition to the repair of the drain valve, initial response action included selective hand excavation in the area of the crankcase drain valve and the use of sorbent pads to collect small surface oil accumulations. GVEA-HPP personnel also dug a small test pit at the east side of the DEG, near the spill source to assess if the lube oil ponded at depth. While this excavation encountered some oil stained gravels, no significant lube oil accumulations were observed or recovered. Based on the initial response conditions, it appeared that the lube oil entered the soil beneath the DEG building. After completing the repairs and initial response actions, the area between the DEG and the retaining wall was covered with polyethylene sheeting, to minimize surface water infiltration.

In consultation with GVEA-HPP management, engineering, operational and environmental personnel, a work plan and schedule was devised for further limited clean-up and site characterization. The work plan included the following tasks:

- Well point installation and vacuum truck free product recovery efforts.
- Selective and limited source area excavation with soil sampling for residual range organics (RRO-AK-103). Contaminated soils would be blended with the HPP-Unit No.1 coal feed for energy recovery and thermal treatment.
- Test pit explorations to determine the limit of the spill.
- Backfill, grading and surface water drainage control around the DEG spill area and re-covering the source area with a reinforced polyethylene liner (rhino-hide).
- Photo documentation of all activities.

A number of concerns were discussed including site and plant safety issues and requirements for equipment and operational support. Since the DEG unit could not be moved, the main technical concern was for the foundation stability of both the DEG and the haul road retaining wall. Any additional excavation in that narrow area would be limited and could not undermine the stability of the structures.

Additional Clean-Up and Site Characterization Activities

The following sections describe the findings and observations resulting from the additional clean-up and site characterization activities conducted during the period August 10-12, 1999. The work was performed by Inland PetroServices of Fairbanks, Alaska. The equipment utilized included the following:

- 3000 gal. Vacuum Truck (capable of 25-inches Hg vacuum).
- Kubota KX-41, rubber track mini- backhoe with dozer blade.
- Bosch 65 lb. jackhammer and 2-inch HD well point.
- CAT-235 Track Hoe (with ditch bucket) (HPP)
- Case W-36 Front End Loader (HPP)
- CAT D-8 Dozer (HPP)

Well Point Installation and Vacuum Truck Free Product Recovery

In order to assess and recover any free product (Lube Oil) that may have accumulated at depth or at the water table beneath or adjacent to the DEG unit, a driven, heavy duty well point and vacuum truck system was used. A review of monitoring well data gathered for the engineering design of the Healy Clean Coal Project (HCCP), located west and down slope from the DEG, indicated that the shallow groundwater table was at 8 to 10 feet bgs. The 2-inch diameter heavy duty well point, with a 3-foot screen section was driven to penetration refusal at approximately 5 feet bgs in the source area of the spill (PHOTO 4). Figure 2 shows the location of the well point and DEG spill area. The vacuum truck was connected to the well point and 20-inches (Hg) of vacuum was applied. Vacuum readings held steady at 15-inches (Hg) for approximately one hour. There was no surface or atmospheric air leaks or breakthrough. After the test period, the well point was sounded for liquid (oil / water) recovery. No free lube oil was recovered, however the well point did contain less than one quart of sheen-free pore water. Upon excavation and removal of the well point, the following observations were made:

- Penetration refusal of the well point was due to sandstone bedrock at 3 to 3.5 feet bgs.
- The screen section did intersect the approximate 2-foot thick DEG gravel pad contaminated with the lube oil and the top of the bedrock formation. The moist to wet sandstone bedrock surface acted as a less permeable barrier to the downward migration of the oil spill.
- Vacuum enhanced free product recovery was not successful due to the viscosity of the SAE 40 weight lube oil. This finding suggests that the lube oil contained within the DEG gravel pad is relatively immobile and that lateral migration due to gravitational forces or from surface water infiltration is minimal. It should also be noted that the lube oil is designated as insoluble by the manufacturer's MSDS.
- Shallow, perched groundwater was not encountered.

Selective Excavation, Clean-Up and Site Characterization

Approximately 10 cy of contaminated soils was removed from the lube oil spill source area along north side of the DEG. The excavated area is shown as the TP-1 Excavation on Figure 2. The total depth excavated in this area was from 3.5 to 5 feet bgs. The depth of excavation was limited by the presence of the sandstone bedrock and stability of both the DEG and retaining wall foundations (PHOTO 5). Contaminated soils were blended into the coal feed for the Unit No. 1 power plant for energy recovery and thermal treatment. Soil processing was completed by August 12, 1999.

Four test pits (TP- 2 thru 5) were excavated along the south and east side of the DEG to delineate the extent of the impacted area (Figure 2). Test pit excavation on the west side of the DEG unit was restricted by underground utilities associated with the DEG control unit building and the HPP-Unit No. 1 facility. Subsurface conditions were generally consistent in the area explored. They consisted of approximately 1 to 1.5 feet of brown gravelly sand "yard fill" overlying 2 feet of compacted brown sandy gravel, which is the

DEG foundation pad. Lube oil contamination was present primarily in the DEG pad as staining, free oil and emulsion. The DEG gravel pad is underlain by a soft to moderately indurated tan sandstone showing minimal lube oil penetration and surface water seepage at the formation contact (PHOTO 6). Groundwater was not encountered in the DEG excavation or test pits. A general geologic log is presented in Figure 2. The area impacted by the lube oil spill consists of the DEG gravel pad and yard fill soils beneath the DEG unit and is approximately 1325 sf in size (0.03 acre). The approximate volume of contaminated soil ranges from 124 - 150 cy. Figure 2 shows the approximate extent of the impacted area.

After completion of the selective excavation and test pit explorations, the holes were backfilled and graded to control surface water infiltration. The source area excavation was covered with an impermeable polyethylene liner and covered with clean fill (PHOTOS 7 & 8).

Five soil samples were collected from the DEG TP-1 excavation to characterize the lube oil concentrations of the soils left in place. Samples were tested for residual range organics (RRO-AK-103) and ranged from 254 ppm in the underlying sandstone unit to 23,700 ppm directly below the crankcase drain valve source area. Soil samples of the DEG gravel pad at the east and west ends of the TP-1 excavation showed decreasing concentrations of 2,530 ppm and 4,330 ppm respectively. Figure 2 shows the locations of the soil samples. Laboratory reports are included in Appendix B.

Soil Clean-Up Levels and Site Specific Considerations

Soil clean-up levels for the 375 gallon DEG lube oil spill were evaluated using Table A1-Method One for Petroleum Hydrocarbon Soil Clean-Up Levels in Non-Arctic Zones and Table B2-Method Two-Petroleum Hydrocarbon Soil Clean-Up Levels (18 AAC 75.341).

Under Table A1-Method One, the matrix score and clean-up level was determined as follows:

PART A	MATRIX CATEGORIES	SCORE
1. <i>Mean Annual Precipitation -</i>	15 to 25 inches	(3)
2. <i>Depth to Groundwater -</i>	5 to 15 feet	(8)
3. <i>Soil Type (USC) -</i>	Coarse-grained with fines (coal)	(8)
4. <i>Potential Receptors -</i>	Nonpotable groundwater	(1)
5. <i>Volume of Contaminated Soil -</i>	100 to 500 cubic yards	(8)
		(28)

Category B (More than 26 to 40) RRO Cleanup Level = 2000mg/kg

Under Table B2-Method Two, the fact that the identity of the released refined petroleum product is known as a Chevron DELO 6170 SAE 40 diesel engine lube oil , focuses into

the C25 to C36 aliphatic hydrocarbon range and the Under 40 Inch Zone. The RRO soil clean-up levels for the exposure pathways of ingestion, inhalation and migration to groundwater is **20,000 mg/kg**.

Soil analysis of RRO concentrations in the DEG spill area range from 254 mg/kg, just below the sandstone bedrock contact to 23,700 mg/kg, directly below the crankcase drain valve. Soil samples at the east and west ends of the TP-1 excavation show decreasing concentrations, demonstrating attenuation of the contamination in a relatively short distance from the source area(less than 50 feet). It can be assumed that within the 1325sf (0.03 acre) footprint of the spill area that the average concentrations of RRO in the DEG gravels and yard fill will range from 2000 to 10,000 ppm, well below the Method Two clean-up level. Although these levels exceed the Method One-Category B matrix score (2000 mg/kg) and in a limited area at the spill source, exceed the Method Two alternate clean-up levels (20,000 mg/kg), these concentrations do not pose a significant threat of migration or risk to human health, safety, welfare, or the environment. The following site specific considerations demonstrate this interpretation:

- The HPP-Unit No. 1 (DEG) site is an industrial facility with restricted access. There are no residential or recreational activities conducted on-site. There are no sensitive ecological receptors on-site.
- All operations personnel are safety trained, familiar with the handling, storage and clean-up of a large variety of industrial hazardous materials / chemicals and are medically monitored. Therefore the risks associated with ingestion, inhalation or dermal contact is minimal.
- The DEG spill area is limited in size at approximately 1325 sf (0.03 acre) and contains approximately 124 to 150 cy of RRO contaminated soils.
- Shallow groundwater was not encountered in the spill area.
- Migration of the lube oil, either under gravity or by surface water infiltration is considered highly unlikely. The lube oil contamination is contained in the compacted DEG gravel fill pad and is underlain by a lower permeability sandstone bedrock formation. The DEG soils contain various concentrations of coal fragments, sand size particles and coal fines, resulting in a higher total organic carbon (TOC) fraction. This higher TOC content further binds the lube oil and minimizes the migration potential. The area around the DEG unit has been graded to control surface water drainage and the source area has been covered to minimize infiltration (PHOTOS 7 & 8). Vacuum enhanced free product recovery was not successful, further demonstrating that the lube oil is not mobile. Another factor to consider is that seasonally frozen ground conditions exist at the HPP site from October through April, further reducing the potential for migration.
- The size of the spill is limited and the released volume has been estimated at 375 gallons. The contamination is from a known petroleum product, a highly refined, non-toxic, viscous and insoluble Chevron lube oil. The lube oil appears to be relatively fresh with minimal crankcase sludge.
- The DEG site is between 700 to 1100 feet up slope from the Tanana River and does not represent an environmental risk.

- The HPP groundwater production well (cased and screened) is located inside the plant facility (approximately 200 feet from the DEG unit) and pumps water from a 300 foot deep aquifer with geothermal properties (GW temperature = ~70°F).
- Repairs on the DEG crankcase drain valve were completed and procedures have been implemented to prevent reoccurrence. This is the only reported oil spill associated with the DEG unit operations. After repairing the failed valve and initiating protective measures, the DEG was put back in service.

Conclusions and Recommendations

The DEG lube oil spill is of limited size and extent and is located within a restricted access industrial facility. The RRO contamination is not expected to present a significant risk to human health, safety, welfare or the environment. Additional clean-up, through selective excavation and thermal treatment, is not economically feasible due to the presence of the 148,000 pound DEG unit. Technical considerations and costs to temporarily remove the DEG to conduct the clean-up work are not warranted due to the low risk nature of this limited subsurface release.

GVEA is evaluating the long term status of the DEG unit in conjunction with the integration, testing and possible retrofitting of both the Unit No.1 plant and the Healy Clean Coal Project (HCCP) plant and construction of the new Intertie. GVEA requests a no further action letter from the ADEC. If and when the DEG is removed from the site, the ADEC will be contacted and the need for additional clean-up be evaluated. Until that time, the DEG site will be monitored for changing conditions and operations will be conducted to prevent further releases.

Respectfully submitted,



Stephen R. Rog
C.P.G. 6743

HPP Unit No.1 - Diesel Emergency Generator

Lube Oil Spill Report

SITE FIGURES and PHOTOS

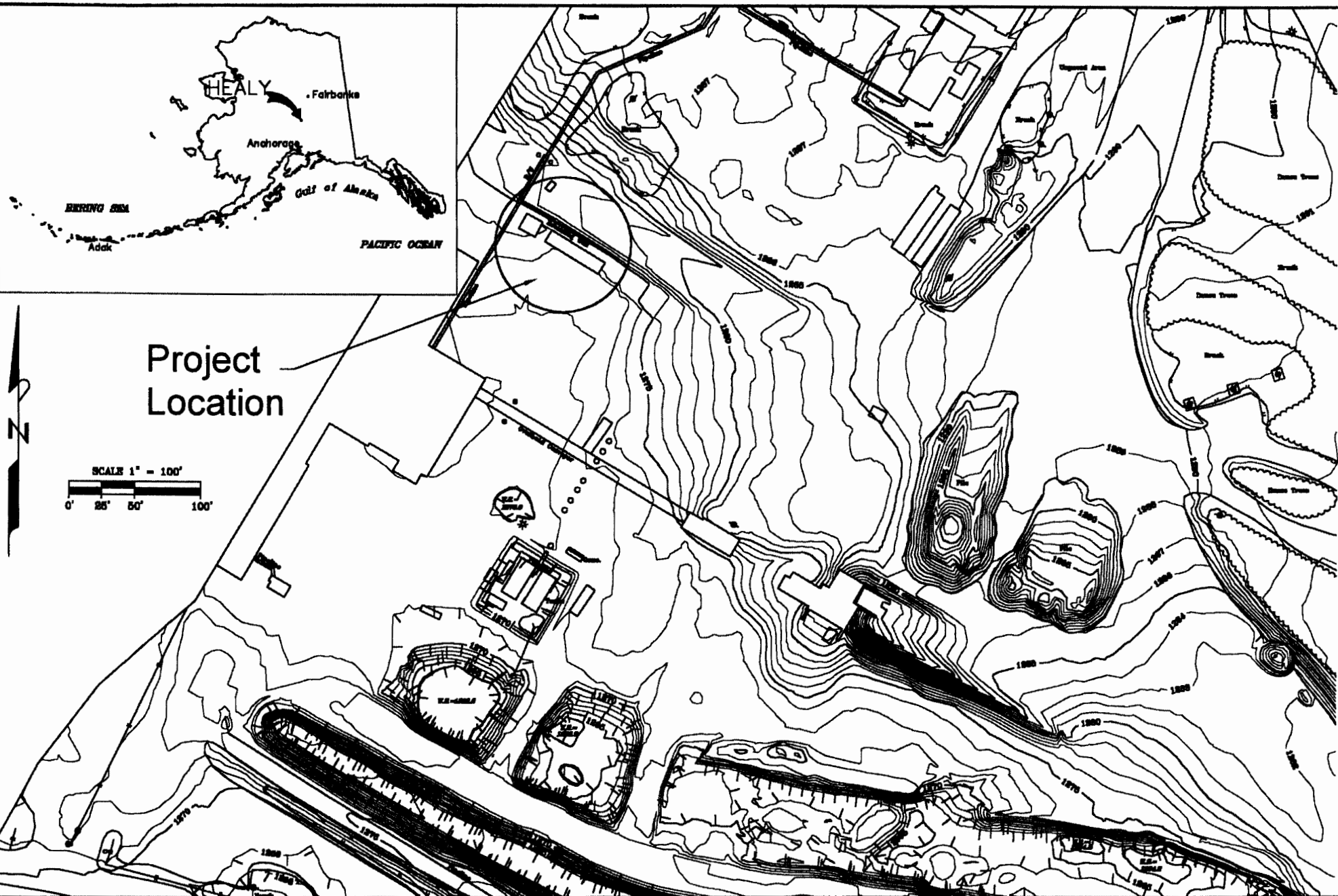
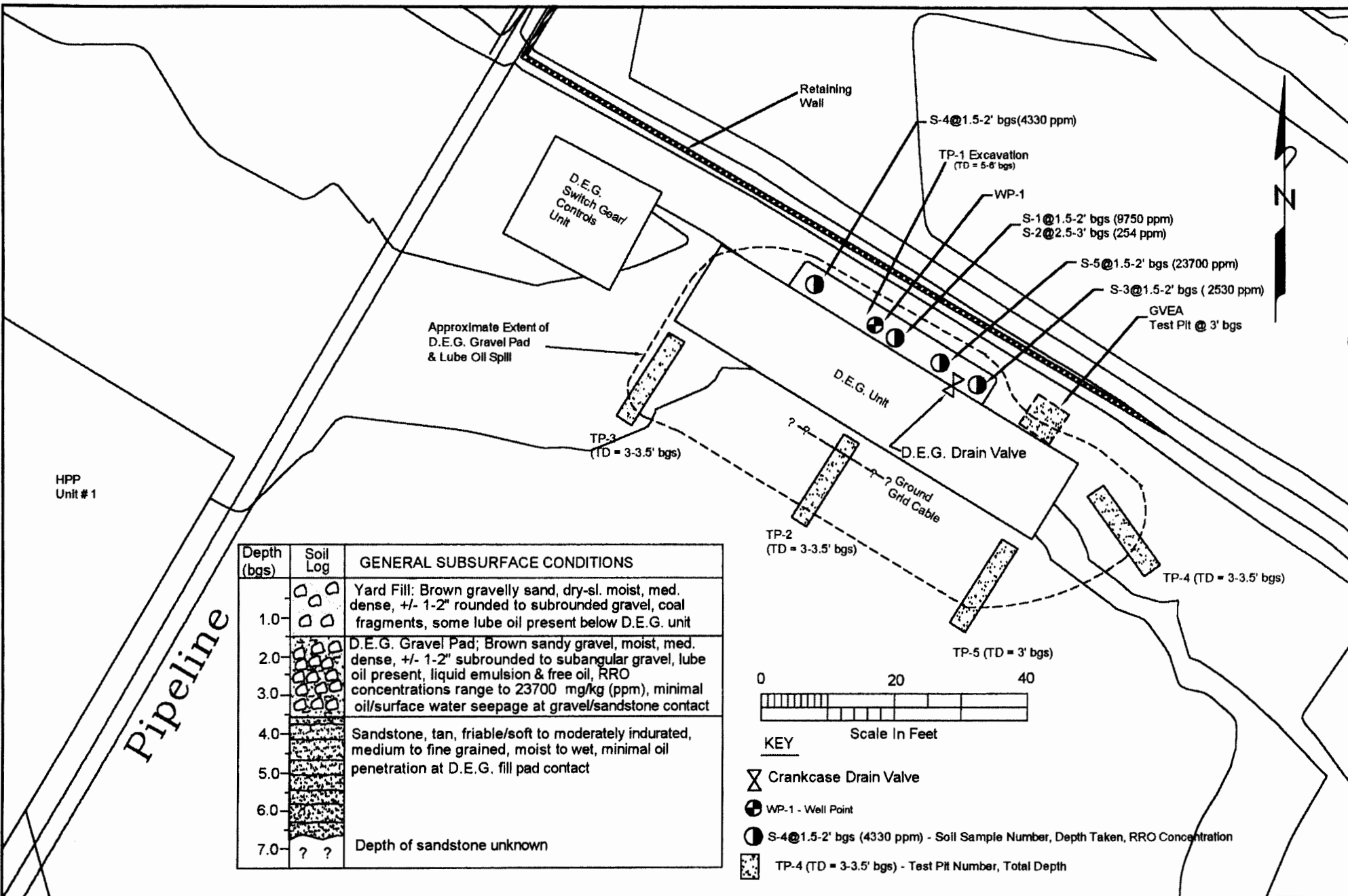


Figure 1
Healy Power Plant Unit No. 1
Diesel Emergency Generator (D.E.G.)
Project Location Map
Healy, Alaska

S. R. ROG, CPG
& ASSOCIATES
P.O. Box 112345
Anchorage, Alaska 99511-2345
ph/fax: (907) 345-0022

FILE: HealyProjectLocMap
JOB NO.: 99-550-1 DATE: 9/99
SCALE: 1" = 100'
REFERENCE: Topo-HCCP-96 REVISED BY: SAE



FILE: SiteExcavationMap

JOB NO.: 99-550-1 DATE: 9/99

SCALE: 1" = 20'

REFERENCE: Topo-HCCP-96 REVISED BY: SAE

Figure 2
Healy Power Plant-Unit No. 1
Diesel Emergency Generator (D.E.G.)
Site Exploration & Excavation Map
Healy, Alaska

S.R. ROG, CPG
& ASSOCIATES

P.O. Box 112345

Anchorage, Alaska 99511-2345

ph/fax: (907) 345-0022



PHOTO 1 - Diesel Emergency Generator (DEG) Unit at the HPP -Unit No. 1



PHOTO 2 - Lube Oil Spill Source Area between DEG and Coal Truck Retaining Wall



PHOTO 3 - DEG Crankcase Drain Valve - Source Area



PHOTO 4 - Well Point Installation in Lube Oil Spill Source Area at the DEG



PHOTO 5 - DEG Spill
Source Area Excavation

PHOTO 6 - DEG Excavation-
Yard Fill Overlying DEG Gravel Pad w/ Lube Oil
Overlying Sandstone Bedrock (minimal penetration)





PHOTO 7 - DEG Source Area Backfill, Liner Placement and Grading

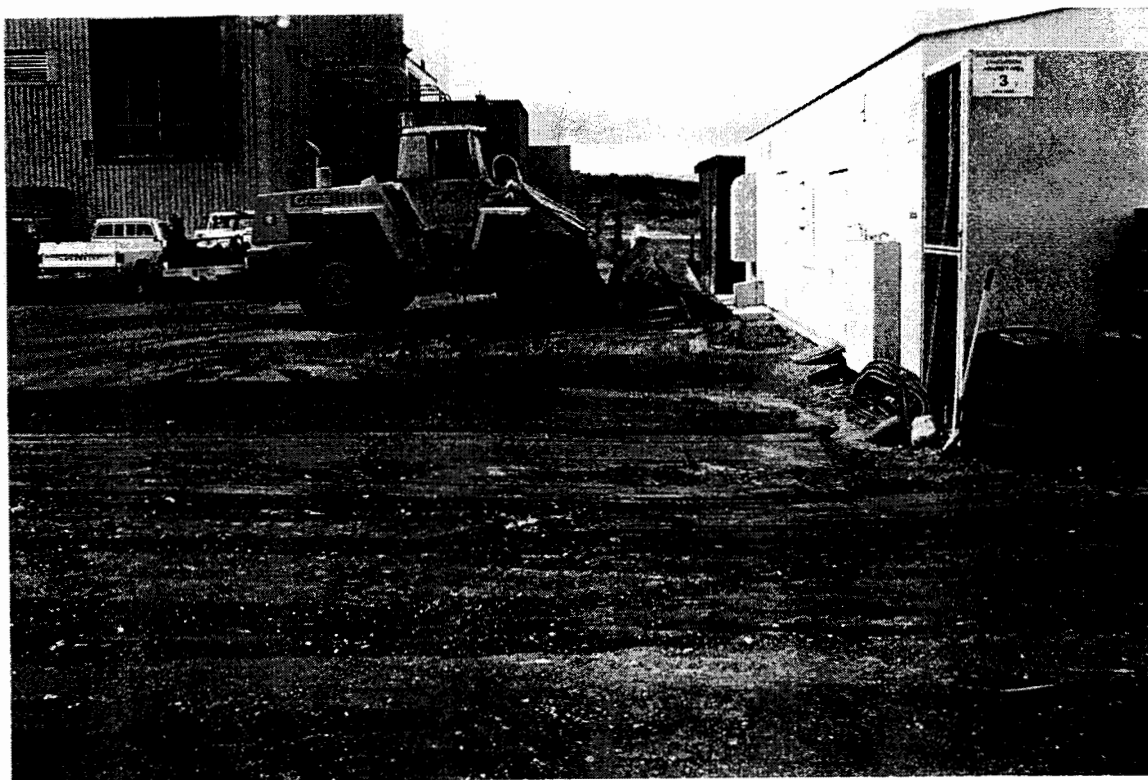


PHOTO 8 - DEG Test Pit Area Backfill and Grading

HPP Unit No.1 - Diesel Emergency Generator

Lube Oil Spill Report

APPENDIX A

Chevron Diesel Engine Oil Delo 6170

Product Information



Material Safety Data Sheet

Page 1 of 7

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

CHEVRON Diesel Engine Oil DELO 6170 SAE 40

PRODUCT NUMBER(S): CPS238145

COMPANY IDENTIFICATION

Chevron Products Company
Global Lubricants
555 Market St.
Room 803
San Francisco, CA 94105-2870

EMERGENCY TELEPHONE NUMBERS

HEALTH (24 hr): (800)231-0623 or
(510)231-0623 (International)
TRANSPORTATION (24 hr): CHEMTREC
(800)424-9300 or (703)527-3887
Emergency Information Centers
are located in U.S.A.
Int'l collect calls accepted

PRODUCT INFORMATION: MSDS Requests: (800) 414-MSDS or (800) 414-6737
Environmental, Safety, & Health Info: (415) 894-0434
Product Information: (800) 582-3835

2. COMPOSITION/INFORMATION ON INGREDIENTS

100.0 % CHEVRON Diesel Engine Oil DELO 6170 SAE 40

CONTAINING

COMPONENTS	AMOUNT	LIMIT/QTY	AGENCY/TYPE
LUBRICATING BASE OIL SEVERELY REFINED PETROLEUM DISTILLATE	> 80.00%	5 mg/m3 (mist) 10 mg/m3 (mist) 5 mg/m3 (mist)	ACGIH TWA ACGIH STEL OSHA PEL

The BASE OIL may be a mixture of any of the following: CAS 64741884,
CAS 64741895, CAS 64741964, CAS 64741975, CAS 64742014, CAS 64742525,
CAS 64742536, CAS 64742547, CAS 64742627, CAS 64742650, or CAS 72623837.

ADDITIVES INCLUDING THE FOLLOWING

Revision Number: 5

Revision Date: 04/21/99

MSDS Number: 004694

advice cannot be obtained, then take the person and product container to the nearest medical emergency treatment center or hospital.

INHALATION:

If respiratory discomfort or irritation occurs, move the person to fresh air. See a doctor if discomfort or irritation continues.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES:

FLASH POINT: (COC) 435F (224C) Min.

AUTOIGNITION: NDA

FLAMMABILITY LIMITS (% by volume in air): Lower: NDA Upper: NDA

EXTINGUISHING MEDIA:

CO2, Dry Chemical, Foam, Water Fog

NFPA RATINGS: Health 1; Flammability 1; Reactivity 0.

FIRE FIGHTING INSTRUCTIONS:

For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.

COMBUSTION PRODUCTS:

Normal combustion forms carbon dioxide and water vapor and may produce oxides of nitrogen, sulfur and toxic chlorine compounds. Incomplete combustion can produce carbon monoxide.

6. ACCIDENTAL RELEASE MEASURES

CHEMTREC EMERGENCY NUMBER (24 hr): (800)424-9300 or (703)527-3887

International Collect Calls Accepted

ACCIDENTAL RELEASE MEASURES:

Stop the source of the leak or release. Clean up releases as soon as possible. Contain liquid to prevent further contamination of soil, surface water or groundwater. Clean up small spills using appropriate techniques such as sorbent materials or pumping. Where feasible and appropriate, remove contaminated soil. Follow prescribed procedures for reporting and responding to larger releases.

7. HANDLING AND STORAGE

DO NOT weld, heat or drill container. Residue may ignite with explosive violence if heated sufficiently. CAUTION! Do not use pressure to empty drum or drum may rupture with explosive force.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS

Use adequate ventilation to keep the airborne concentrations of this material below the recommended exposure standard.

No product toxicology data available. The hazard evaluation was based on data from similar materials.

SKIN EFFECTS:

No product toxicology data available. The hazard evaluation was based on data from similar materials.

ACUTE ORAL EFFECTS:

No product toxicology data available. The hazard evaluation was based on data from similar materials.

ACUTE INHALATION EFFECTS:

No product toxicology data available. The hazard evaluation was based on data from similar materials.

ADDITIONAL TOXICOLOGY INFORMATION:

This product contains petroleum base oils which may be refined by various processes including severe solvent extraction, severe hydrocracking, or severe hydrotreating. None of the oils requires a cancer warning under the OSHA Hazard Communication Standard (29 CFR 1910.1200). These oils have not been listed in the National Toxicology Program (NTP) Annual Report nor have they been classified by the International Agency for Research on Cancer (IARC) as; carcinogenic to humans (Group 1), probably carcinogenic to humans (Group 2A), or possibly carcinogenic to humans (Group 2B).

During use in engines, contamination of oil with low levels of cancer-causing combustion products occurs. Used motor oils have been shown to cause skin cancer in mice following repeated application and continuous exposure. Brief or intermittent skin contact with used motor oil is not expected to have serious effects in humans if the oil is thoroughly removed by washing with soap and water. See Chevron Material Safety Data Sheet No. 1793 for additional information on used motor oil.

12. ECOLOGICAL INFORMATION

ECOTOXICITY:

No data available.

ENVIRONMENTAL FATE:

This material is not expected to present any environmental problems other than those associated with oil spills.

13. DISPOSAL CONSIDERATIONS

Oil collection services and collection centers are available for used motor oil recycling or disposal. Some service stations, automotive service centers, and retailers provide motor oil collection facilities.

Place contaminated materials in containers and dispose of in a manner consistent with applicable regulations. Contact your sales representative or local environmental or health authorities for approved disposal or recycling methods.

16. OTHER INFORMATION.

NFPA RATINGS: Health 1; Flammability 1; Reactivity 0;

(0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, *- Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).

REVISION STATEMENT:

PRODUCT DISCONTINUED. This Material Safety Data Sheet will no longer be updated.

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TLV - Threshold Limit Value	TWA - Time Weighted Average
STEL - Short-term Exposure Limit	TPQ - Threshold Planning Quantity
RQ - Reportable Quantity	PEL - Permissible Exposure Limit
C - Ceiling Limit	CAS - Chemical Abstract Service Number
Al-5 - Appendix A Categories	() - Change Has Been Proposed
NDA - No Data Available	NA - Not Applicable

Prepared according to the OSHA Hazard Communication Standard (29 CFR 1910.1200) and the ANSI MSDS Standard (Z400.1) by the Toxicology and Health Risk Assessment Unit, CRTC, P.O. Box 1627, Richmond, CA 94804

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modification of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

THIS IS THE LAST PAGE OF THIS MSDS

Subject:Information on DELO 6170

Date:Thu, 9 Sep 1999 15:05:16 -0700

From:"Griffis, Larry (LCGR)" <LCGR@chevron.com>

To:"steverog@gci.net" <steverog@gci.net>

Cc:"Zipursky, Lorne S. (LSZI)" <LSZI@chevron.com>

This product is > 83% base oil. After our telephone conversation I reviewed the formula and this product was blended with non-Chevron base oils. These base oils have been tested in the modified Ames test for extractable mutagenic activity (ASTM E1687-95) and all had mutagenicity indices < 1.0, indicating they are safe relative to content of polycyclic aromatic compounds.

The supplier of the chlorinated paraffins used in this product has confirmed that the CPs are all in the C23 - C30 size range and there are no C12, 60% chlorine compounds.

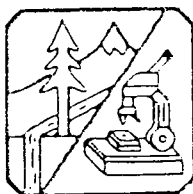
I am having the last revision of MSDS 4694 (revision 5) mailed to you.

HPP Unit No.1 - Diesel Emergency Generator

Lube Oil Spill Report

APPENDIX B

NTL LABORATORY REPORTS



NORTHERN TESTING LABORATORIES, INC.

3330 INDUSTRIAL AVENUE
8005 SCHOON STREET
POUCH 340043

FAIRBANKS, ALASKA 99701
ANCHORAGE, ALASKA 99516
PRUDHOE BAY, ALASKA 99734

(907) 456-3116 • FAX 456-3125
(907) 349-1000 • FAX 349-1016
(907) 659-2145 • FAX 659-2146

Golden Valley Electric Association
P.O. Box 71249
Fairbanks, AK 99707

Attn: Kate Lamal

Client ID: DEG-TP-1; S-1 @ 1.5-2ft

Client Project #:

Source: Healy Power Plant

NTL Lab#: A162814

Sample Matrix: Soil

Comments:

Report Date: 9/3/99

Date Arrived: 8/13/99

Sample Date: 8/11/99

Sample Time: 8:15

Collected By: Steve Rog

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
AK 103	Residual Range Organics	mg/dry kg	9750	1020	8/19/99	8/27/99
	C36 (Surr)	% Recovery	125			
SM 2540 G	Total Solids, Percent	%	98.2		8/23/99	8/25/99

RECEIVED

SEP 13 1999

GVEA - Personnel

Stephanie K. Cowling
Reported By: Stephanie K. Cowling
Chemistry Supervisor



NORTHERN TESTING LABORATORIES, INC.

3330 INDUSTRIAL AVENUE
8005 SCHOON STREET
POUCH 340043

FAIRBANKS, ALASKA 99701
ANCHORAGE, ALASKA 99518
PRUDHOE BAY, ALASKA 99734

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(907) 349-1000 • FAX 349-1016
(907) 659-2145 • FAX 659-2146

Golden Valley Electric Association
P.O. Box 71249
Fairbanks, AK 99707

Attn: Kate Lamal

Client ID: DEG-TP-1; S-2 @ 2.5-3ft

Client Project #:

Source: Healy Power Plant

NTL Lab#: A162815

Sample Matrix: Soil

Comments:

Report Date: 9/3/99

Date Arrived: 8/13/99

Sample Date: 8/11/99

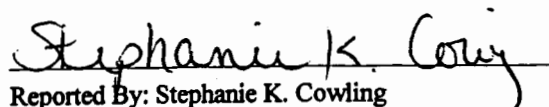
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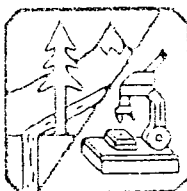
Collected By: Steve Rog

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
AK 103						
	Residual Range Organics	mg/dry kg	254	110	8/19/99	8/27/99
	C36 (Surr)	% Recovery	107			
SM 2540 G						
	Total Solids, Percent	%	90.6		8/23/99	8/25/99


Reported By: Stephanie K. Cowling
Chemistry Supervisor



NORTHERN TESTING LABORATORIES, INC.

3330 INDUSTRIAL AVENUE
8605 SCHOON STREET
POUCH 340043

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ANCHORAGE, ALASKA 99518
PRUDHOE BAY, ALASKA 99734

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Golden Valley Electric Association
P.O. Box 71249
Fairbanks, AK 99707

Attn: Kate Lamal

Client ID: DEG-TP-1; S-3 @ 1.5-2ft

Client Project #:

Source: Healy Power Plant

NTL Lab#: A162816

Sample Matrix: Soil

Comments:

Report Date: 9/3/99

Date Arrived: 8/13/99

Sample Date: 8/11/99


Sample Time: 11:30

Collected By: Steve Rog

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
AK 103						
	Residual Range Organics	mg/dry kg	2530	1090	8/19/99	8/27/99
	C36 (Surr)	% Recovery	103			
SM 2540 G						
	Total Solids, Percent	%	91.4		8/23/99	8/25/99


Reported By: Stephanie K. Cowling
Chemistry Supervisor



NORTHERN TESTING LABORATORIES, INC.

3336 INDUSTRIAL AVENUE
6005 SCHOON STREET
POUCH 340043

FAIRBANKS, ALASKA 99701
ANCHORAGE, ALASKA 99518
PRUDHOE BAY, ALASKA 99734

(907) 456-3116 • FAX 456-3125
(907) 349-1000 • FAX 349-1016
(907) 659-2145 • FAX 659-2146

Golden Valley Electric Association
P.O. Box 71249
Fairbanks, AK 99707

Attn: Kate Lamal

Client ID: DEG-TP-1; S-4 @ 1.5-2ft

Client Project #:

Source: Healy Power Plant

NTL Lab#: A162817

Sample Matrix: Soil

Comments:

Report Date: 9/3/99

Date Arrived: 8/13/99

Sample Date: 8/11/99

Sample Time: 14:00

Collected By: Steve Rog

** Legend **

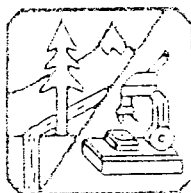
MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
AK 103	Residual Range Organics	mg/dry kg	4330	103	8/19/99	8/27/99
	C36 (Surr)	% Recovery	109			
SM 2540 G	Total Solids, Percent	%	96.6		8/23/99	8/25/99

Stephanie K. Cowling

Reported By: Stephanie K. Cowling

Chemistry Supervisor



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Golden Valley Electric Association
P.O. Box 71249
Fairbanks, AK 99707

Attn: Kate Lamal

Client ID: DEG-TP-1; S-5 @ 1.5-2ft

Client Project #:

Source: Healy Power Plant

NTL Lab#: A162818

Sample Matrix: Soil

Comments:

Report Date: 9/3/99

Date Arrived: 8/13/99

Sample Date: 8/11/99

Sample Time: 11:45

Collected By: Steve Rog

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
AK 103						
	Residual Range Organics	mg/dry kg	23700	1030	8/19/99	8/27/99
	C36 (Surr)	% Recovery	130			
SM 2540 G						
	Total Solids, Percent	%	96.7		8/23/99	8/25/99

Stephanie K. Cowling
Reported By: Stephanie K. Cowling
Chemistry Supervisor