

DISTRICT I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
1301 W. Grand Avenue, Artesia, NM 88210  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy Minerals and Natural Resources

Form C-144  
June 1, 2004

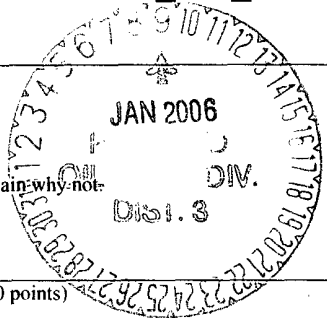
Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

For drilling and production facilities, submit to  
appropriate NMOCD District Office.  
For downstream facilities, submit to Santa Fe  
office

**Pit or Below-Grade Tank Registration or Closure**

Is pit or below-grade tank covered by a "general plan"? Yes ☐ No ☐

Type of action: Registration of a pit or below-grade tank ☐ Closure of a pit or below-grade tank ☒

Operator: <u>Duncan Oil</u> Telephone: <u>(303) 759-3303</u> e-mail address: <u>sfallin@duncanoil.com</u>		
Address: <u>1777 South Harrison Street - Penthouse One, Denver, Colorado 80210</u>		
Facility or well name: <u>N. Hogback 7 No. 1</u> API #: <u>3004520033</u> U/L or Qtr/Qtr <u>E</u> Sec <u>7</u> T <u>29N</u> R <u>16W</u>		
County: <u>San Juan</u> Latitude <u>36° 44.54'</u> Longitude <u>-108° 34.37'</u> NAD: 1927 <input checked="" type="checkbox"/> 1983 <input type="checkbox"/>		
Surface Owner: Federal <input type="checkbox"/> State <input type="checkbox"/> Private <input type="checkbox"/> Indian <input checked="" type="checkbox"/>		
<b>Pit</b> Type: Drilling <input type="checkbox"/> Production <input checked="" type="checkbox"/> Disposal <input type="checkbox"/> Workover <input type="checkbox"/> Emergency <input type="checkbox"/> Lined <input type="checkbox"/> Unlined <input checked="" type="checkbox"/> Liner type: Synthetic <input type="checkbox"/> Thickness <u>      </u> mil Clay <input type="checkbox"/> Pit Volume <u>      </u> bbl	<b>Below-grade tank</b> Volume: <u>      </u> bbl Type of fluid: Construction material: Double-walled, with leak detection? Yes <input type="checkbox"/> If not, explain why not: <u>      </u>	
Depth to ground water (vertical distance from bottom of pit to seasonal high water elevation of ground water.)	Less than 50 feet (20 points) 50 feet or more, but less than 100 feet (10 points) 100 feet or more (0 points) 20	
Wellhead protection area: (Less than 200 feet from a private domestic water source, or less than 1000 feet from all other water sources.)	Yes (20 points) No (0 points) 0	
Distance to surface water: (horizontal distance to all wetlands, playas, irrigation canals, ditches, and perennial and ephemeral watercourses.)	Less than 200 feet (20 points) 200 feet or more, but less than 1000 feet (10 points) 1000 feet or more (0 points) 10	
<b>Ranking Score (Total Points)</b> 30		

**If this is a pit closure:** (1) Attach a diagram of the facility showing the pit's relationship to other equipment and tanks. (2) Indicate disposal location: (check the onsite box if you are burying in place) onsite ☐ offsite ☒ If offsite, name of facility Envirotech Landfarm #2. (3) Attach a general description of remedial action taken including remediation start date and end date. (4) Groundwater encountered: No ☐ Yes ☒ If yes, show depth below ground surface 15 ft. and attach sample results. (5) Attach soil sample results and a diagram of sample locations and excavations.

Additional Comments:
Approximately 400 cubic yards of contaminated soil was excavated from the North Hogback 7-#1 Separator pit and hauled to Envirotech's Landfarm.
Documentation of BTEX analysis via USEPA Method 8021B is attached for the ground water sample.
Documentation of TPH and OVM results are also attached for the soil samples
Prior to backfilling, the pit was sprayed with a potassium permanganate solution to further aid in the break down of the residual contamination

I hereby certify that the information above is true and complete to the best of my knowledge and belief. I further certify that the above-described pit or below-grade tank has been/will be constructed or closed according to NMOCD guidelines ☒, a general permit ☐, or an (attached) alternative OCD-approved plan ☐.

Date: 1/4/06  
Printed Name/Title Steve Fallin - Production Manager Signature Steve Fallin

Your certification and NMOCD approval of this application/closure does not relieve the operator of liability should the contents of the pit or tank contaminate ground water or otherwise endanger public health or the environment. Nor does it relieve the operator of its responsibility for compliance with any other federal, state, or local laws and/or regulations.

**DEPUTY OIL & GAS INSPECTOR, DIST. 4**

Approval: Wendy Farn Date: JAN 09 2006  
Printed Name/Title Wendy Farn Signature Wendy Farn

CLIENT: Duncan O. I

**ENVIROTECH INC.**  
ENVIRONMENTAL SCIENTISTS & ENGINEERS  
5796 U.S. HIGHWAY 64-3014  
FARMINGTON, NEW MEXICO 87401  
PHONE: (505) 632-0615

LOCATION NO: \_\_\_\_\_

C.O.C. NO: \_\_\_\_\_

**FIELD REPORT: CLOSURE VERIFICATION**PAGE No: 1 of 1

LOCATION: NAME: N. Hogback 7 WELL #: 1 PIT: TB  
QUAD/UNIT: \_\_\_\_\_ SEC: 7 TWP: 29 N RNG: 16 W PM: NMPH CNTY: SJ ST: NM  
QTR/FOOTAGE: \_\_\_\_\_ CONTRACTOR: \_\_\_\_\_

DATE STARTED: 9/19/05  
DATE FINISHED: 9/22/05

ENVIRONMENTAL SPECIALIST: GWCEXCAVATION APPROX. 73 FT. x 43 FT. x 12 FT. DEEP. CUBIC YARDAGE: 1572DISPOSAL FACILITY: Envirotech LF # 2 REMEDIATION METHOD: Landfarm

LAND USE: \_\_\_\_\_ LEASE: \_\_\_\_\_ FORMATION: \_\_\_\_\_

FIELD NOTES &amp; REMARKS: PIT LOCATED APPROXIMATELY \_\_\_\_\_ FT. \_\_\_\_\_ FROM WELLHEAD.

DEPTH TO GROUNDWATER: 12' NEAREST WATER SOURCE: >1000 NEAREST SURFACE WATER: 200-1000NMDCD RANKING SCORE: 40 NMDCD TPH CLOSURE STD: 100 PPM

CHECK ONE:

☒ PIT ABANDONED☐ STEEL TANK INSTALLEDSOIL AND EXCAVATION DESCRIPTION:

Approximately 1,572 yd<sup>3</sup> of contaminated soil was removed and disposed of at Envirotech's NMDCD permitted Landfarm

## FIELD 418.1 CALCULATIONS

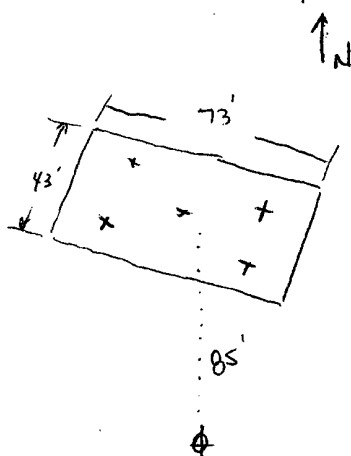
TIME	SAMPLE I.D.	LAB No:	WEIGHT (g)	mL. FREON	DILUTION	READING	CALC. ppm
	See 418.1 Analysis log on following pages						

SCALE



0 FT

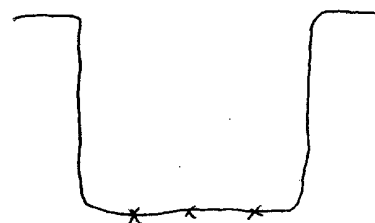
## PIT PERIMETER



## OVM RESULTS

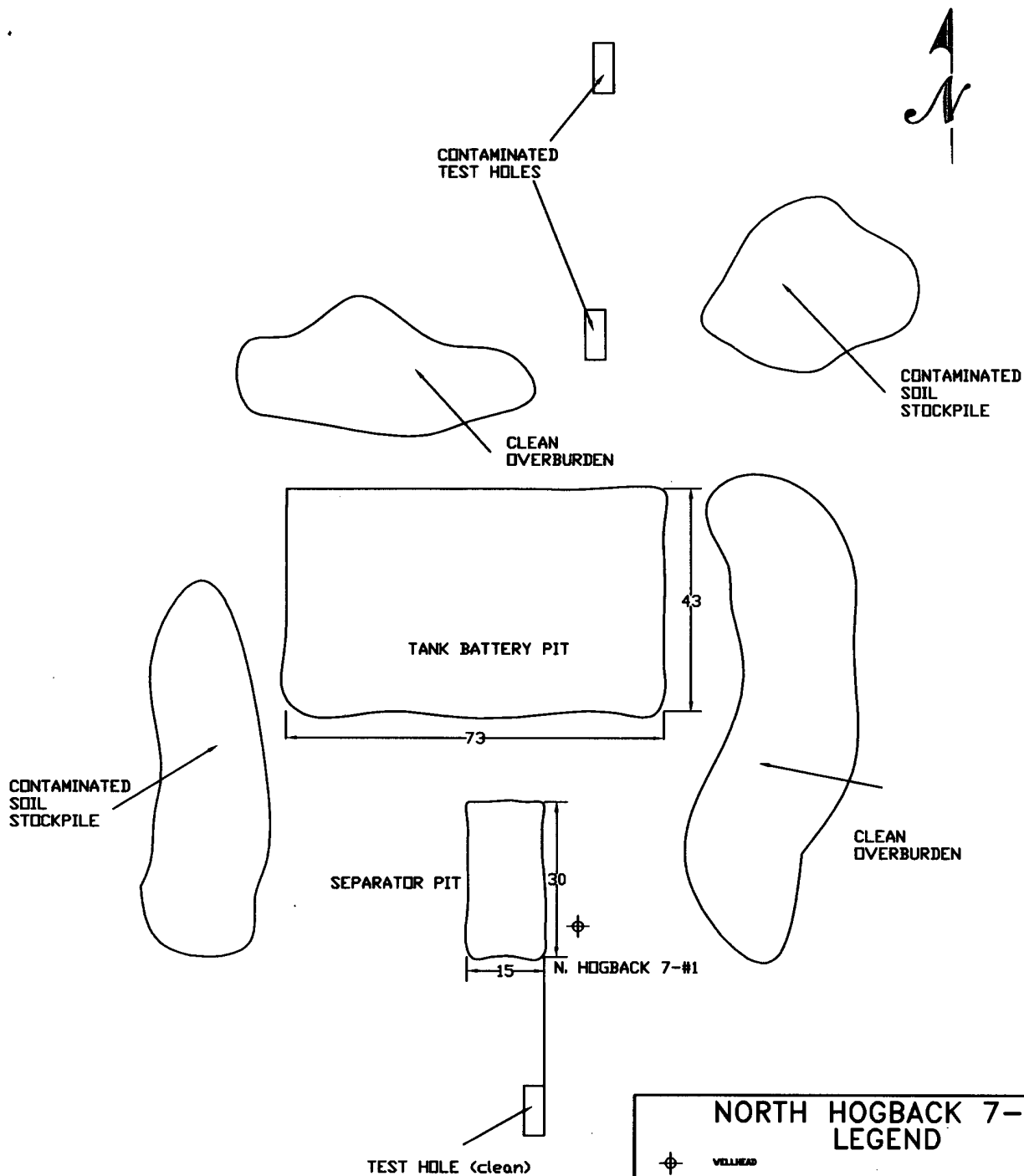
SAMPLE ID	FIELD HEADSPACE PID (ppm)	
1 South	77/3.0	
2 West	66	
3 North	10	
4 East	14	
5 Bottom	11/3	
<del>6</del>		
1 1/2 North	0.0	
9 1/2 East	182/46/	
9 1/2 West	7	
9 1/2 South	5.3	
LAB SAMPLES		
SAMPLE ID	ANALYSIS	TIME

## PIT PROFILE



TRAVEL NOTES: CALLOUT: \_\_\_\_\_ ONSITE: \_\_\_\_\_

LEASE # 14-20-0603-10009



# NORTH HOGBACK 7-#1 LEGEND



WELLHEAD

SCALE:

PROJECT NO.05161-001

FIGURE NO. 2

REV

## REVISIONS

NO.	DATE	BY	DESCRIPTION
MAP DRWN	GWC	11/29/05	BASE DRWN

ENVIRONMENTAL SCIENTISTS & ENGINEERS  
**ENVIROTECH**

5796 U.S. HIGHWAY 64, FARMINGTON, NM 87401 505-632-0615

# ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

## EPA METHOD 8021 AROMATIC VOLATILE ORGANICS

Client:	Duncan Oil	Project #:	05161-001
Sample ID:	7-1 TB	Date Reported:	09-08-05
Chain of Custody:	14788	Date Sampled:	09-06-05
Laboratory Number:	34267	Date Received:	09-06-05
Sample Matrix:	Water	Date Analyzed:	09-08-05
Preservative:	Cool	Analysis Requested:	BTEX
Condition:	Cool & Intact		

Parameter	Concentration (ug/L)	Dilution Factor	Det. Limit (ug/L)
<b>Benzene</b>	<b>0.6</b>	<b>1</b>	<b>0.2</b>
<b>Toluene</b>	<b>3.0</b>	<b>1</b>	<b>0.2</b>
<b>Ethylbenzene</b>	<b>6.4</b>	<b>1</b>	<b>0.2</b>
<b>p,m-Xylene</b>	<b>3.5</b>	<b>1</b>	<b>0.2</b>
<b>o-Xylene</b>	<b>0.8</b>	<b>1</b>	<b>0.1</b>

**Total BTEX** **14.3**


ND - Parameter not detected at the stated detection limit.

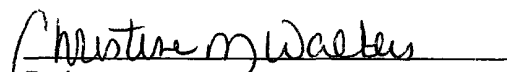
Surrogate Recoveries:	Parameter	Percent Recovery
	<b>fluorobenzene</b>	<b>99 %</b>
	<b>1,4-difluorobenzene</b>	<b>99 %</b>
	<b>4-bromochlorobenzene</b>	<b>99 %</b>

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic and Halogenated Volatiles by Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors, SW-846, USEPA December 1996.

**Comments:** **Hogback.**

  
Analyst

  
Review

**EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS**

Client:	Duncan Oil	Project #:	05161-001
Sample No.:	2	Date Reported:	9/20/2005
Sample ID:	Composite Sample Bottom @ 12'	Date Sampled:	9/19/2005
Sample Matrix:	Soil	Date Analyzed:	9/19/2005
Preservative:	Cool	Analysis Needed:	TPH-418.1
Condition:	Cool and Intact		

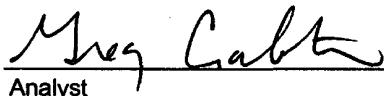
Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	16.0	5.0

ND = Parameter not detected at the stated detection limit.

References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No. 4551, 1978.

Comments: **North Hogback 7 - #1 TB**

Instrument calibration checked against 100 ppm standard. Zeroed before each sample

  
Analyst

  
Review

**EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS**

Client:	Duncan Oil	Project #:	05161-001
Sample No.:	4	Date Reported:	9/21/2005
Sample ID:	Composite Sample of West Wall	Date Sampled:	9/20/2005
Sample Matrix:	Soil	Date Analyzed:	9/20/2005
Preservative:	Cool	Analysis Needed:	TPH-418.1
Condition:	Cool and Intact		

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
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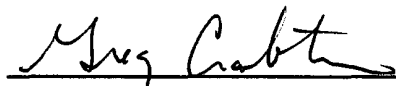
<b>Total Petroleum Hydrocarbons</b>	<b>ND</b>	<b>5.0</b>
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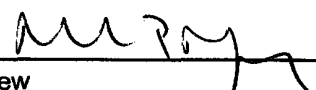
ND = Parameter not detected at the stated detection limit.

References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No. 4551, 1978.

Comments: **North Hogback 7 - #1 TB**

Instrument callibration checked against 100 ppm standard. Zeroed before each sample

  
Analyst

  
Review

**EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS**

Client:	Duncan Oil	Project #:	05161-001
Sample No.:	3	Date Reported:	9/21/2005
Sample ID:	Composite Sample of North Wall	Date Sampled:	9/20/2005
Sample Matrix:	Soil	Date Analyzed:	9/20/2005
Preservative:	Cool	Analysis Needed:	TPH-418.1
Condition:	Cool and Intact		

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
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<b>Total Petroleum Hydrocarbons</b>	<b>12.0</b>	<b>5.0</b>
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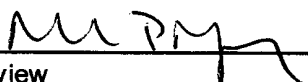
ND = Parameter not detected at the stated detection limit.

References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No. 4551, 1978.

Comments: **North Hogback 7 - #1 TB**

Instrument callibration checked against 100 ppm standard. Zeroed before each sample

  
Analyst

  
Review

**EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS**

Client:	Duncan Oil	Project #:	05161-001
Sample No.:	7	Date Reported:	9/26/2005
Sample ID:	Composite Sample of East Wall	Date Sampled:	9/22/2005
Sample Matrix:	Soil	Date Analyzed:	9/22/2005
Preservative:	Cool	Analysis Needed:	TPH-418.1
Condition:	Cool and Intact		

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	96.0	5.0

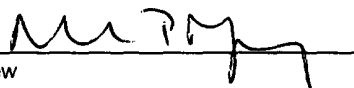
ND = Parameter not detected at the stated detection limit.

References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No. 4551, 1978.

Comments: **North Hogback 7 - #1 TB**

Instrument callibration checked against 100 ppm standard. Zeroed before each sample

  
\_\_\_\_\_  
Analyst

  
\_\_\_\_\_  
Review



**EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS**

Client:	Duncan Oil	Project #:	05161-001
Sample No.:	1	Date Reported:	9/20/2005
Sample ID:	Composite Sample South Wall	Date Sampled:	9/19/2005
Sample Matrix:	Soil	Date Analyzed:	9/19/2005
Preservative:	Cool	Analysis Needed:	TPH-418.1
Condition:	Cool and Intact		

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
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<b>Total Petroleum Hydrocarbons</b>	<b>20.0</b>	<b>5.0</b>
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ND = Parameter not detected at the stated detection limit.

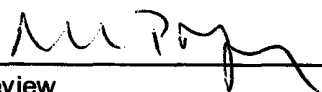
References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No. 4551, 1978.

Comments: **North Hogback 7 - #1 TB**

Instrument calibration checked against 100 ppm standard. Zeroed before each sample



Analyst



Review

# ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

## CATION / ANION ANALYSIS

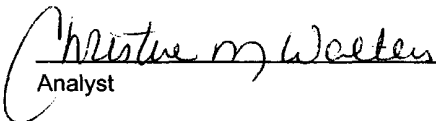
Client: Duncan Oil  
Sample ID: 7-1 TB  
Laboratory Number: 34267  
Chain of Custody: 14788  
Sample Matrix: Water  
Preservative: Cool  
Condition: Cool & Intact

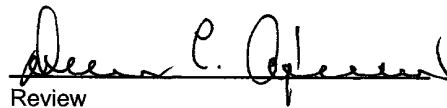
Project #: 05161-001  
Date Reported: 09-07-05  
Date Sampled: 09-06-05  
Date Received: 09-06-05  
Date Extracted: N/A  
Date Analyzed: 09-07-05

Parameter	Analytical Result	Units		
pH	7.40	s.u.		
Conductivity @ 25° C	1,400	umhos/cm		
Total Dissolved Solids @ 180C	880	mg/L		
Total Dissolved Solids (Calc)	892	mg/L		
SAR	1.3	ratio		
Total Alkalinity as CaCO3	584	mg/L		
Total Hardness as CaCO3	588	mg/L		
Bicarbonate as HCO3	584	mg/L	9.57	meq/L
Carbonate as CO3	<0.1	mg/L	0.00	meq/L
Hydroxide as OH	<0.1	mg/L	0.00	meq/L
Nitrate Nitrogen	0.9	mg/L	0.01	meq/L
Nitrite Nitrogen	<0.001	mg/L	0.00	meq/L
Chloride	23.6	mg/L	0.67	meq/L
Fluoride	0.35	mg/L	0.02	meq/L
Phosphate	8.4	mg/L	0.27	meq/L
Sulfate	211	mg/L	4.39	meq/L
Iron	0.047	mg/L	0.00	meq/L
Calcium	194	mg/L	9.68	meq/L
Magnesium	25.4	mg/L	2.09	meq/L
Potassium	3.20	mg/L	0.08	meq/L
Sodium	70.7	mg/L	3.08	meq/L
Cations			14.93	meq/L
Anions			14.93	meq/L
Cation/Anion Difference			0.01%	

Reference: U.S.E.P.A., 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.  
Standard Methods For The Examination of Water And Waste Water", 18th ed., 1992.

Comments: **Hogback.**

  
Analyst

  
Review

Client:	Duncan Oil	Project #:	05161-001
Sample ID:	7-1 TB	Date Reported:	09-07-05
Laboratory Number:	34267	Date Sampled:	09-06-05
Chain of Custody:	14788	Date Received:	09-06-05
Sample Matrix:	Water	Date Analyzed:	09-07-05
Preservative:	Cool	Date Digested:	09-07-05
Condition:	Cool & Intact	Analysis Needed:	Fe, Mn, Pb

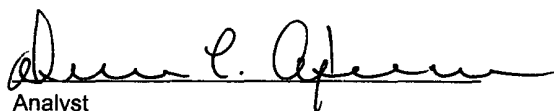
Parameter	Concentration (mg/L)	Det. Limit (mg/L)
Iron	0.106	0.001
Manganese	0.161	0.001
Lead	ND	0.001

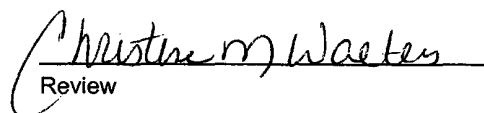
ND - Parameter not detected at the stated detection limit.

References: Method 3050B, Acid Digestion of Sediments, Sludges and Soils.  
SW-846, USEPA, December 1996.

Method 6010B, Analysis of Metals by Inductively Coupled Plasma Atomic Emission Spectroscopy, SW-846, USEPA, December 1996.

Comments: **Hogback.**

  
Analyst

  
Review