RMC LONESTAR

90 NOV -7 AM 10:08

6601 Koll Center Parkway
P.O. Box 5252
Pleasanton, CA 94566
(415) 426-8787

90 NOV 7 AM 10:08

November 2, 1990

Mr. Scott Seery, Hazardous Materials Specialist
Alameda County Health Agency
Department of Environmental Health
80 Swan Way, Rm 200
Oakland, CA 94621

Subject: Sunol Quarry Site: Diesel Fuel Cleanup Status Report and Site Closure Plan

Dear Mr. Seery:

This is a cover letter to the November 1 Progress Report written by Geo Strategies, Inc. (GSI). The report describes the substantial excavation and testing which we have conducted to remedy the diesel spill of August 20, 1990. It also recommends the remaining steps to be taken in order to properly close the excavation and dispose of the contaminated soil. We are asking for your approval of those recommendations (see page 8 of attached report).

As we all know, this unauthorized release was a particularly malicious act of vandalism which occurred on lands owned by the San Francisco Water Department. RMC-LONESTAR greatly appreciates the responses of your agency, the Regional Water Quality Control Board as represented by Mr. Kazemi, and other public agencies who assisted us with this problem. Because of your help, combined with the able work of GSI and a favorable natural setting, I am confident that any potential threat to public health through the ground water has been averted. Let me explain a little more about the benefit of the natural setting.

Having this fuel spill occur on the embankment overlooking our active quarry pit was a mixed blessing. It presented an immediate concern to the standing waters within the pit, albeit they were some distance away. It also gave us an excellent cross section of the site lithology and migratory pathway which the spill followed as it diffused into the subsurface sediments. Fortunately, we had some 38 vertical feet of vadose zone below surface before reaching ground water. Essentially all of

our excavation took place in this vadose section. The fact that all the excavation took place in the quarry side wall above the water table gave us an unusual amount of geologic control in managing this cleanup.

With regard to the disposition of our stockpile of contaminated soil, we propose that it can be declared non-hazardous based upon the following calculation: percent diesel fuel by volume = 2700 gallons - 3000 cubic yards of soil = 0.4% or 4,000 ppm. As non-hazardous fuel contaminated soil, we suggest that this will constitute a non-RCRA hazardous waste under California Health and Safety Code (HSC). Furthermore, we believe that this soil may qualify for an exemption to the "used in a manner constituting disposal or applied to the land" provisions of HSC Section 25143.2 if the soil is incorporated into concrete or aggregate product. On Monday, November 5, RMC LONESTAR is participating in a workshop addressing this issue of exempting certain hazardous and non-hazardous wastes as recyclable materials to be used in road paving products. The workshop will be held by Ms. Jessie Schnell of the Altenative Technology Division of the State Department of Health Services. We would like to defer our proposal for disposing of the contaminated soil based on the outcome of that workshop. Accordingly, that proposal will be provided in the near future in a separate letter.

Thank you for giving this report your earliest attention. It is important for us to backfill our excavation before the winter rains.

Sincerely,

Harry W. Reppert, Director
Environmental Affairs

cc: Al Spotorno, San Francisco Water Dept.
Hossain Kazemi, Calif. Regional Water Quality Control Bd.
Jeffrey L Peterson, Geo Strategies Inc.

hr1102a

GeoStrategies Inc.

PROGRESS REPORT

RMC Lonestar
6527 Calaveras Road
Sunol, California

Report No. 7004-2

November 1, 1990

GeoStrategies Inc.
2140 WEST WINTON AVENUE
HAYWARD, CALIFORNIA 94545
(415) 352-4800

November 1, 1990

RMC Lonestar
P.O. Box 5252
Pleasanton, California 94566

Attn: Mr. Harry Reppert

Re: PROGRESS REPORT
6527 Calaveras Road
Sunol, California

Gentlemen:

This report describes the installation of three ground-water monitoring wells, the excavation of diesel contaminated soils, and the collection of soil and ponded surface water samples at the above referenced RMC Lonestar (RMC) site (Plate 1). Field work was performed in accordance with the GeoStrategies Inc. (GSI) Field Methods and Procedures (Appendix A), the GSI Sampling Plan dated September 27, 1990, and in compliance with appropriate State of California and local agency guidelines.

BACKGROUND

On August 21, 1990, approximately 2,700 gallons of diesel fuel were spilled near the diesel tank building. Diesel fuel flowed off a concrete pad adjacent to the diesel tank building, and ponded on soils in two areas: one pond to the east and one southeast of the diesel tank building (Plate 2).

Immediately upon discovery, RMC personnel applied roadbase material to the area of the spill in an attempt to absorb the diesel. GSI was retained to characterize and remediate the diesel spillage and began emergency response cleanup and spill characterization on August 22, 1990.

A meeting was held on September 28, 1990 with representatives of the Alameda County Health Care Services Agency (ACHCS) and the Regional Water Quality Control Board-San Francisco Bay Region (RWQCB) to review the progress of site activities and approve the proposed soil sampling plan. The proposed soil sampling plan is presented in a GSI report dated September 27, 1990.

FIELD ACTIVITIES AND PROCEDURES

Soil excavation and ground-water monitoring well installation activities at this site were conducted in three phases. Phase One consisted of excavation of diesel contaminated soils between August 22 and 29, 1990. Phase Two consisted of the installation of Wells RMC-2 and RMC-3 on September 14, and the installation of Well RMC-4 on September 25, 1990. Phase Three consisted of additional excavation of diesel contaminated soils, development and sampling of Wells RMC-2 through RMC-4 and the temporary impoundment and sampling of groundwater seeping from the slope face below the excavation noted on October 4, 1990.

Phase One: Initial Excavation

Initial excavation of the soil beneath the spill area began on August 22, 1990. Excavation activities were directed by a GSI geologist. Soils were removed from the excavation and screened based on suspected diesel saturation, soil odor and discoloration. Observed and potentially contaminated soils in the area of the spill were excavated and relocated to an inactive area of the facility and placed on Visquine plastic. Stockpiled soils were also covered with plastic daily following completion of excavation activities. RMC notified the Bay Area Air Quality Management District (BAAQMD) of the excavation activities and the existence of the stockpile under Regulation 8, Rule 40.

On September 7, 1990, preliminary soil samples (RMCX-1 through RMCX-6) were collected from six locations within the excavation (Plate 3). Sample locations were chosen in areas believed to be clean on the sidewalls or floor of the excavation, but situated stratigraphically below areas of suspected contamination. The vertical and horizontal extents of the excavation are shown on Plates 3 and 4.

Phase Two: Monitoring Well Installation

On September 14, 1990, GSI installed two ground-water monitoring wells (RMC-2 and RMC-3). A third well (RMC-4) was installed September 25, 1990. Monitoring well borings were drilled using a truck-mounted, hollow-stem auger drilling rig. Field work was performed in accordance with the GSI Field Methods and Procedures (Appendix A). Soil samples for lithologic description were collected at five-foot intervals using a Standard Penetration Sampler (SPT) and a modified California split-spoon sampler fitted with brass sample tube liners. A GSI geologist supervised the drilling and prepared a lithologic log for each boring using the Unified Soils Classification System and Munsell Soil Color Chart. Exploratory boring logs are presented in Appendix B.

Monitoring Well Installation

Well RMC-2 was installed to a depth of 42.5 feet, Well RMC-3 to a depth of 18.5 feet, and Well RMC-4 to a depth of 40 feet below existing ground surface. Well construction details are presented with the exploratory boring logs presented in Appendix B. All monitoring wells were constructed using 2-inch-diameter Schedule 40 PVC well casing with 0.020-inch machine-slotted well screen. Lonestar #2/12 graded sand was placed in the annular space around the entire well screen length to one-half foot above the well screen in Well RMC-3, and to two feet above the well screen in Well RMC-4. One-foot of bentonite was place on top of the sand in Well RMC-3, and two-feet of bentonite was placed above the sand in Wells RMC-2 and RMC-4, and then hydrated with clean water. A concrete seal was placed from the top of the bentonite to 1.5 feet below ground surface. Wells RMC-2 and RMC-4 were completed by extending blank PVC well casing approximately three-feet above ground surface, and then enclosing the well casing in a locking steel stovepipe vault. Well casing for Well RMC-3 was extended approximately 3 feet above ground surface, but has not yet been encased in a steel stovepipe vault. A locking water-proof cap was placed on the top of each well casing.

Phase Three: Extended excavation

Areas of the excavation which were not observed to have an obvious discoloration or odor of diesel were reconnaissance screened for diesel using thin-layer chromatography techniques (refer to Appendix C). Based on these reconnaissance data and the previous sampling data (samples RMCX-1 through RMCX-6), additional excavation in the area of soil samples RMCX-1, and RMCX-3 through RMCX-6 was initiated on October 4, 1990.

Three areas in the original excavation required additional soil removal. First, the eastern-most (11-foot deep) portion of the excavation adjacent to the trees and Well RMC-4 was extended westward approximately 10 feet. Second, a small basal area near the western-most extent of the excavation was extended approximately 2 feet deeper. Third, the southwestern corner of the excavation was enlarged northward and excavated to groundwater. Potentially contaminated soils removed during this phase were added to the stockpile of contaminated soil.

Prior to initiation of the third phase of work, ongoing mining activities in the former quarry pit immediately south of the excavation allowed groundwater to seep from the quarry pit wall. During removal of contaminated soils in the southwestern portion of the excavation on October 4, 1990, a free-product sheen was observed on groundwater seeping from the quarry pit wall. The seep area was temporarily impounded with clayey materials in four localities (Pond #1 through Pond #4) to restrict movement of the diesel contaminated water. Absorbent pads (Sorbent Pads brand) were floated on the surface of Pond #2 to remove the product sheen that formed on the surface. The locations of the four ponds are shown on Plate 5. These ponds were sampled by Gettler-Ryan Inc. (G-R) on October 5, 1990. Approximately 10,000 gallons of water and diesel from Pond #2, and standing water in the bottom of the excavation were removed by vacuum truck on October 11, 1990.

On October 4, 5, 10 and 11, 1990, soil samples were collected in the locations proposed in the GSI Sampling Plan. Soil sample locations are shown on Plate 5. Vertical and horizontal extent of the final excavation area are shown on Plates 5 and 6.

Soil Sampling Procedures

Soil samples selected from each sampled interval above first-encountered water in exploratory borings RMC-2 through RMC-4 were used to perform head-space analysis in the field for the presence of Volatile Organic Compounds (VOCs). The test procedure involved removing soil from a brass liner into a clean glass jar and immediately covering the jar with aluminum foil secured under a ring-type threaded lid. After approximately twenty minutes, the foil was pierced and the head-space within the jar was tested for total organic vapor using an Organic Vapor Monitor (OVM) photoionization detector. These field procedures were performed and data recorded as reconnaissance data. Soil samples were selected for their proximity to ground surface, the most likely samples to contain diesel contamination; and on sample proximity to the saturated zone, to evaluate the extent of vertical migration of contaminants toward groundwater. Head-space analysis results are presented on each of the appended exploratory boring logs (Appendix B).

Soil samples retained from exploratory borings RMC-2 and RMC-4 were collected using a California-Modified split-spoon sampler. Soil samples collected from the walls and floor of the excavation were collected with a hand-driven soil core sampling device. Soil samples retained for chemical analysis were collected in clean brass tube liners. Upon removal from the sampling device, sample tubes were immediately covered on both ends with aluminum foil and sealed with plastic end caps. The soil samples were labeled, entered on a Chain-of-Custody form, placed in a cooler with blue ice, and transported to International Technology (IT) Analytical Services, a State-certified laboratory located in San Jose, California.

HYDROGEOLOGIC SETTING

The site is located on the eastern side of Sunol Valley approximately 0.25 mile east of the present course of Alameda Creek and approximately 0.5 mile south of San Antonio Creek (Plate 1). In this area, silty and clayey gravels of the Livermore Formation extend to approximately 400 feet below ground surface (California Department of Water Resources, 1974; RMC Lonestar, personnel communication, 1990).

Based on exploratory boring log information, soils encountered include clay, sand and gravel to a depth of 45 feet below ground surface. Clay (CL) was encountered in Boring RMC-2 to approximately 12 feet, and clayey gravel (GC) and clay (CL) were encountered in Boring RMC-4 to approximately 20 feet below ground surface. Below the clay, soils consisted predominantly of well-graded gravel (GW) interspersed with lesser amounts of poorly-graded sand (SP) and clayey sand (SC).

Examination of the excavation sidewalls suggest a heterogenous vertical and horizontal distribution of relatively high and low permeability zones. Lenses of poorly-graded gravels (GP), approximately 0.5 to 2 feet in thickness, and with little to no interstitial fine material, exist above the saturated zone. Rootholes were encountered in the eastern portion of the excavation near the trees and Well RMC-4. Sands similar to the sand (SP) encountered in well boring RMC-2 are interspersed and discontinuous on excavation sidewalls.

Ground-water Occurrence

Groundwater was initially encountered between 30 and 38 feet below ground surface in well borings RMC-2 and RMC-4, respectively. Well boring RMC-3 was drilled from a point approximately 30 feet in elevation below RMC-2 and RMC-4. Groundwater was encountered in boring RMC-3 approximately 3 feet below ground surface. When measured by G-R on October 5, 1990, shallow groundwater had an approximate calculated hydraulic gradient of 0.013 ft./ft. toward the southwest. Potentiometric data have been compiled in Table 1, and are plotted and contoured on Plate 7. The G-R Groundwater Sampling Report is presented in Appendix D.

Sidewall observations of aggregate mining at this facility to a depth of approximately 90 feet below ground surface show that **ground-water has not been encountered below approximately 40 feet.** In mined areas **groundwater currently flows from the walls of the quarry pits between approximately 30 and 35 feet,** above an apparently very low permeability stratum of clayey gravel. Drill rig response during this investigation suggests that this apparently very low permeability gravel was encountered in Boring RMC-2 and RMC-4.

CHEMICAL ANALYTICAL RESULTS

Soil and ground-water samples were analyzed for Total Petroleum Hydrocarbons calculated as Diesel (TPH-Diesel) according to EPA Method 8015 (Modified). At the request of the ACHCSA, six soil samples from the excavation were also analyzed for Benzene, Toluene, Ethylbenzene and Xylenes (BTEX) according to EPA Method 8020.

Soil Analytical Results

The six soil samples collected during the first phase of excavation work (RMCX-1 through RMCX-6) contained TPH-Diesel. Concentrations ranged from 720 to 17,000 parts per million (ppm). These data are compiled in Table 2.

Two soil samples were collected from the unsaturated zone in well borings RMC-2 (15 and 30 feet below ground surface), and RMC-4 (16 and 26 feet below ground surface). TPH-Diesel was not detected in these samples. Because groundwater was encountered at approximately 3 feet below ground surface in Boring RMC-3, no samples from this boring were submitted for chemical analysis. These data are compiled in Table 3.

Twenty-four soil samples were collected after the latest phase of excavation work was performed (RMCX-7 through RMCX-20 and RMCX-23 through RMCX-32). TPH-Diesel was detected in 18 of these samples, with concentrations ranging from 4.1 to 970 ppm. Three samples had concentrations above 100 ppm: RMCX-8 (270 ppm), RMCX-19 (970 ppm) and RMCX-23 (120 ppm). In addition, five samples (RMCX-19, RMCX-24 through RMCX-26 and RMCX-29) were analyzed for BTEX; none were detected. Sample RMCX-13 was also analyzed for BTEX; benzene was not detected, but toluene, ethylbenzene and xylenes were detected at concentrations below current Department of Health Services (DHS) Action Levels and RWQCB Maximum Contaminant Levels (MCLs). These data are compiled in Table 2. NET Pacific, Inc. chemical analytical reports are presented in Appendix E.

Ground-water Analytical Results

Samples were collected by G-R from Wells RMC-2 through RMC-4, and from Ponds #1 through #4 on October 5, 1990. Samples from RMC-2 through RMC-4 and Ponds #1, #3 and #4 did not contain detectable concentrations of TPH-Diesel. Pond #2 contained 710 parts per billion (ppb) of TPH-Diesel. The analytical laboratory reported that the chromatographic pattern of the compounds detected and calculated as diesel in this sample is similar to but does not match that of the diesel standard used for calibration. Chemical results have been compiled in Table 1, and have been plotted and presented on Plate 8. IT Analytical Services chemical analytical reports are presented with the G-R Groundwater Sampling Report in Appendix D.

RECOMMENDATIONS

Based on the concentrations of TPH-Diesel in soil samples collected during this latest phase of excavation and in water samples collected from Ponds #1 through #4 and Wells RMC-2 through RMC-4, the following actions are recommended. Recommendations need not be implemented in the order presented, and some recommendations may be implemented concurrently.

- Continue monitoring the shallow groundwater beneath the site by sampling of Wells RMC-2 through RMC-4 for TPH-Diesel. Ground-water samples will be analyzed according to EPA Method 8015 (Modified). Because current RMC Lonestar plans call for mining of the aggregate in the area of the excavation to approximately 90 feet below the present ground surface, the monitoring wells will be sampled quarterly. Monitoring wells will be properly abandoned after four continuous quarters with no detectable (ND) concentrations of TPH-Diesel.

- Continue to sample Pond #2 for TPH-Diesel. If TPH-Diesel is detected in Pond #2, remove water and sample Pond #4 for TPH-Diesel to ascertain if dissolved diesel is migrating downslope. Ground-water samples will be analyzed for TPH-Diesel according to EPA Method 8015 (Modified).

- Seal diesel contaminated soils beneath the concrete slab and southeastern corner of the diesel tank building. This will be accomplished by forming a wall of concrete or bentonite along the eastern and southern edges of the concrete slab, and the eastern and southern sides of the diesel tank building. This wall should be a minimum of 6-inches thick, and will extend from ground surface to at least three feet below ground surface. This wall is intended to isolate the diesel contaminated soil beneath the slab and the diesel tank building and minimize the effects from percolating surface waters, preventing the downward migration of contaminants. Remediation of these contaminated soils will be addressed at a future date, when the building and slab are removed.

- **Excavate additional soils in the area of Samples RMCX-8 and RMCX-19.** Soil samples will be collected in these areas following excavation to verify the removal of contaminated soils in these areas following the additional excavation work.

- Backfill the excavation to a depth of approximately 1 to 2 feet below original ground surface. Cap and compact the area of excavation with clayey soils to the original ground surface level.

- Dispose of stockpiled contaminated soil by handling to an approved landfill facility or by bioremediating on-site.

If you have any questions, please call.

GeoStrategies Inc. by,

Stephen J. Carter
Geologist

Jeffrey L. Peterson
Senior Hydrogeologist
R.E.A. 1021

REGISTERED GEOLOGIST
CHRISTOPHER M. PALMER
№ 1262
CERTIFIED
ENGINEERING
GEOLOGIST
STATE OF CALIFORNIA

Christopher M. Palmer
C.E.G. 1262, R.E.A. 285

SJC/JLP/kjj

Plate 1. Vicinity and Site Location Maps
Plate 2. Site Plan
Plate 3. Excavation Plan (September 7, 1990)
Plate 4. Cross-Sections (September 7, 1990)
Plate 5. Extended Excavation Plan (October 7, 1990)
Plate 6. Cross-Section (October 12, 1990)
Plate 7. Potentiometric Map
Plate 8. TPH-D Concentration Map

Appendix A: Field Methods and Procedures
Appendix B: Exploratory Boring Logs and Well Construction Details
Appendix C: Thin-Film Chromatography Methodology
Appendix D: Gettler-Ryan Inc. Groundwater Sampling Report
Appendix E: Soil Analytical Reports

References

California Department of Water Resources, 1974, Evaluation of ground-water resources: Livermore and Sunol Valleys; Bulletin No. 118-2

GeoStrategies Inc., 1990, Sampling Plan: Report No. 7004-1, dated September 27, 1990.

TABLE 1

GROUND-WATER ANALYSIS DATA

WELL NO	SAMPLE DATE	ANALYSIS DATE	TPH-D (PPB)	WELL ELEV (FT)	STATIC WATER ELEV (FT)	PRODUCT THICKNESS (FT)	DEPTH TO WATER (FT)
RMC-2	05-Oct-90	10-Oct-90	<60.	100.00	65.0	----	35.0
RMC-3	05-Oct-90	10-Oct-90	<50.	71.12	63.29	----	7.83
RMC-4	05-Oct-90	10-Oct-90	<50.	101.38	65.46	----	35.92
POND-1	05-Oct-90	10-Oct-90	<50.	----	----	----	----
POND-2	05-Oct-90	10-Oct-90	710. *	----	----	----	----
POND-3	05-Oct-90	10-Oct-90	<50.	----	----	----	----
POND-4	05-Oct-90	10-Oct-90	<50.	----	----	----	----

TPH-D = Total Petroleum Hydrocarbons calculated as Diesel
PPB = Parts Per Billion

Note: 1. For chemical parameter detection limits, refer to I.T. Laboratory reports.
2. Water level elevations referenced to project datum.

* Chromatographic pattern of compounds detected and calculated as diesel is similar to but does not match that of the diesel standard used for calibration.

TABLE 2

EXCAVATION SOIL SAMPLE ANALYSIS DATE

SAMPLE NO	SAMPLE DATE	ANALYSIS DATE	TPH-D (PPM)	BENZENE (PPB)	TOLUENE (PPB)	ETHYLBENZENE (PPB)	XYLENES (PPB)
RMCX-1	07-Sep-90	12-Sep-90	3000	----	----	----	----
RMCX-2	07-Sep-90	12-Sep-90	790	----	----	----	----
RMCX-3	07-Sep-90	12-Sep-90	4500	----	----	----	----
RMCX-4	07-Sep-90	12-Sep-90	8100	----	----	----	----
RMCX-5	07-Sep-90	12-Sep-90	3500	----	----	----	----
RMCX-6	07-Sep-90	12-Sep-90	17000	----	----	----	----
RMCX-7	05-Oct-90	11-Oct-90	9.4	----	----	----	----
RMCX-8	05-Oct-90	11-Oct-90	[illegible]	----	----	----	----
RMCX-9	05-Oct-90	11-Oct-90	54	----	----	----	----
RMCX-10	04-Oct-90	11-Oct-90	<1	----	----	----	----
RMCX-11	05-Oct-90	11-Oct-90	53	----	----	----	----
RMCX-12	05-Oct-90	11-Oct-90	4.1	----	----	----	----
RMCX-13	04-Oct-90	11-Oct-90 (3)	64	<2.5	31	33	170
RMCX-14	05-Oct-90	11-Oct-90	34	----	----	----	----
RMCX-15	05-Oct-90	11-Oct-90	8.3	----	----	----	----
RMCX-16	05-Oct-90	11-Oct-90	20	----	----	----	----
RMCX-17	04-Oct-90	11-Oct-90	24	----	----	----	----

Phase I

Phase II

TPH-D = Total Petroleum Hydrocarbons calculated as Diesel
PPM = Parts Per Million
PPB = Parts Per Billion

Note: 1) For chemical parameter detection limits, refer to NET Pacific, Inc. reports.
2) BTEX Compounds analyzed 10-Oct-90.
3) BTEX Compounds analyzed 11-Oct-90.
4) BTEX Compounds analyzed 19-Oct-90.
5) BTEX Compounds analyzed 18-Oct-90.
6) BTEX Compounds analyzed 17-Oct-90.

TABLE 2

EXCAVATION SOIL SAMPLE ANALYSIS DATE

SAMPLE NO	SAMPLE DATE	ANALYSIS DATE	TPH-D (PPM)	BENZENE (PPB)	TOLUENE (PPB)	ETHYLBENZENE (PPB)	XYLENES (PPB)
RMCX-18	05-Oct-90	11-Oct-90	78	----	----	----	----
RMCX-19	05-Oct-90	15-Oct-90 (2)	920	<2.5	<2.5	<2.5	<2.5
RMCX-20	05-Oct-90	11-Oct-90	22	----	----	----	----
RMCX-23	04-Oct-90	11-Oct-90	120	----	----	----	----
RMCX-24	05-Oct-90	14-Oct-90 (3)	22	<2.5	<2.5	<2.5	<2.5
RMCX-25	11-Oct-90	17-Oct-90 (4)	<1	<2.5	<2.5	<2.5	<2.5
RMCX-26	11-Oct-90	17-Oct-90 (5)	<1	<2.5	<2.5	<2.5	<2.5
RMCX-27	10-Oct-90	17-Oct-90	<1	----	----	----	----
RMCX-28	10-Oct-90	17-Oct-90	14	----	---	----	----
RMCX-29	10-Oct-90	17-Oct-90 (6)	<1	<2.5	<2.	<2.5	<2.5
RMCX-30	11-Oct-90	17-Oct-90	<1	----	----	----	----
RMCX-31	11-Oct-90	17-Oct-90	64	----	----	----	----
RMCX-32	11-Oct-90	17-Oct-90	60	----	----	----	----

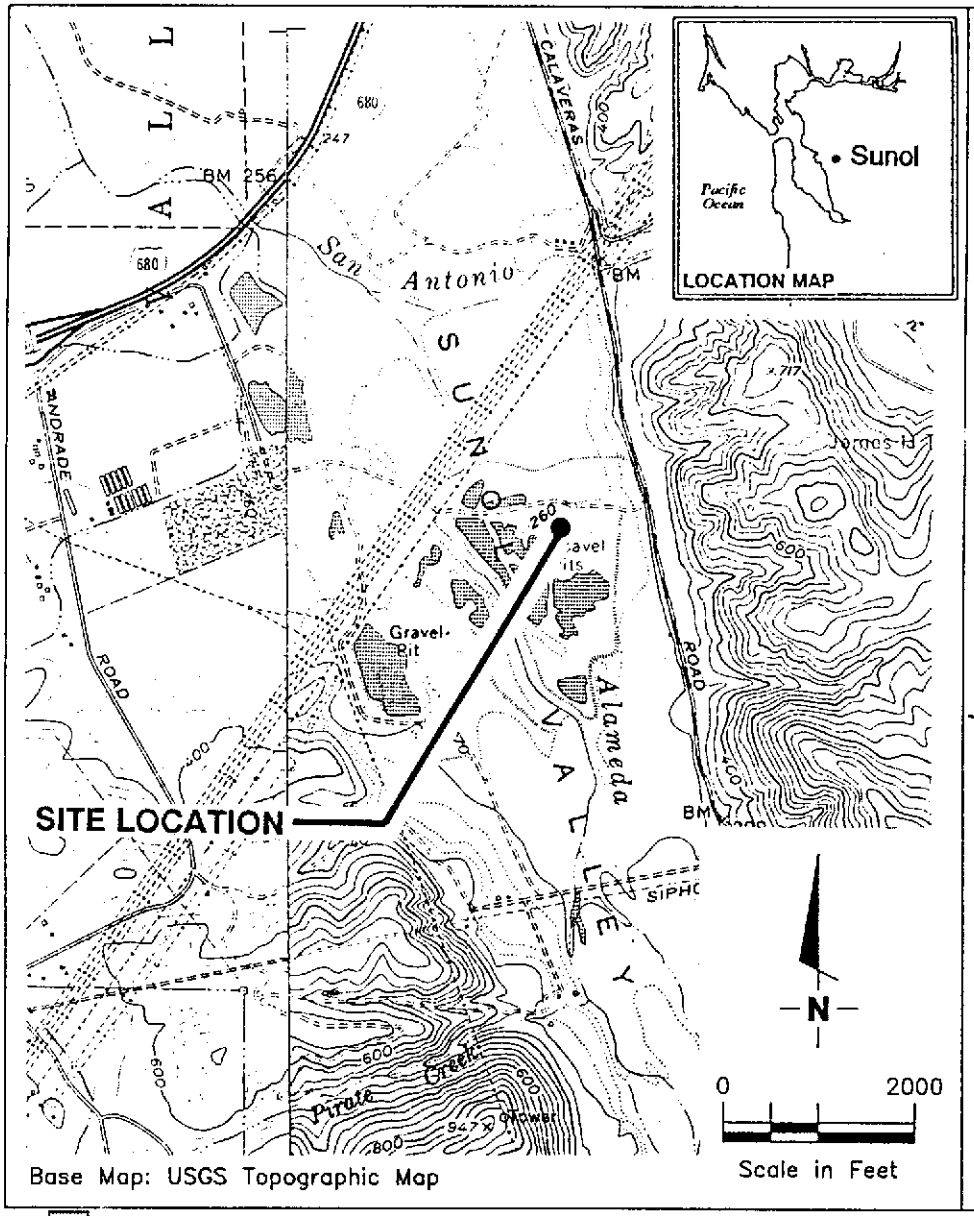
TABLE 3

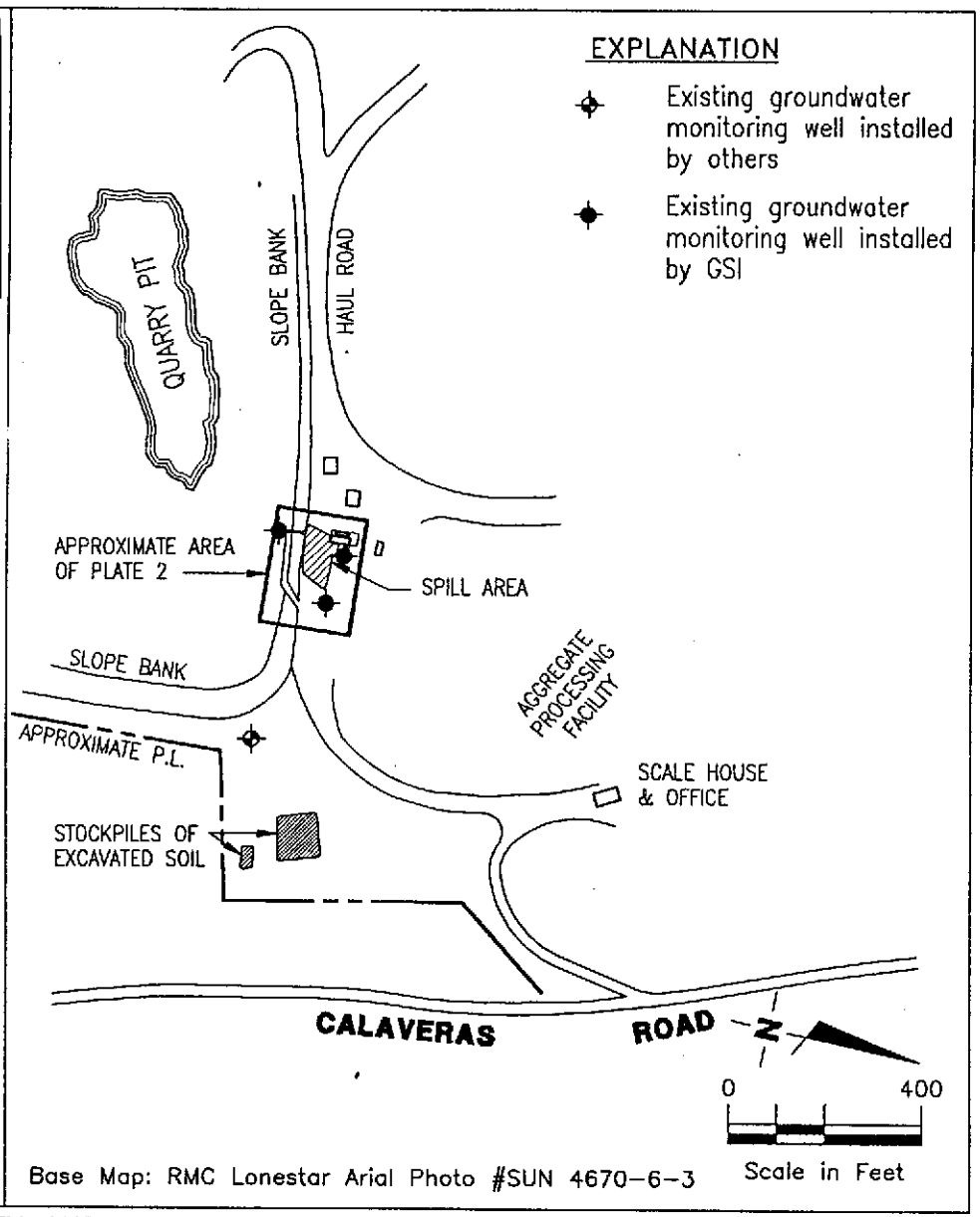
EXPLORATORY SOIL BORING
SOIL ANALYSIS DATA

SAMPLE NO	SAMPLE DATE	ANALYSIS DATE	TPH-D (PPM)
RMC2-15	14-Sep-90	24-Sep-90	<1
RMC2-30	14-Sep-90	24-Sep-90	<1
RMC4-16	25-Sep-90	05-Oct-90	<1
RMC4-26	25-Sep-90	05-Oct-90	<1

TPH-D = Total Petroleum Hydrocarbons calculated as Diesel
PPM = Parts Per Million

Note: For chemical parameter detection limits, refer to NET Pacific, Inc. reports





GeoStrategies Inc.

VICINITY AND SITE LOCATION MAPS

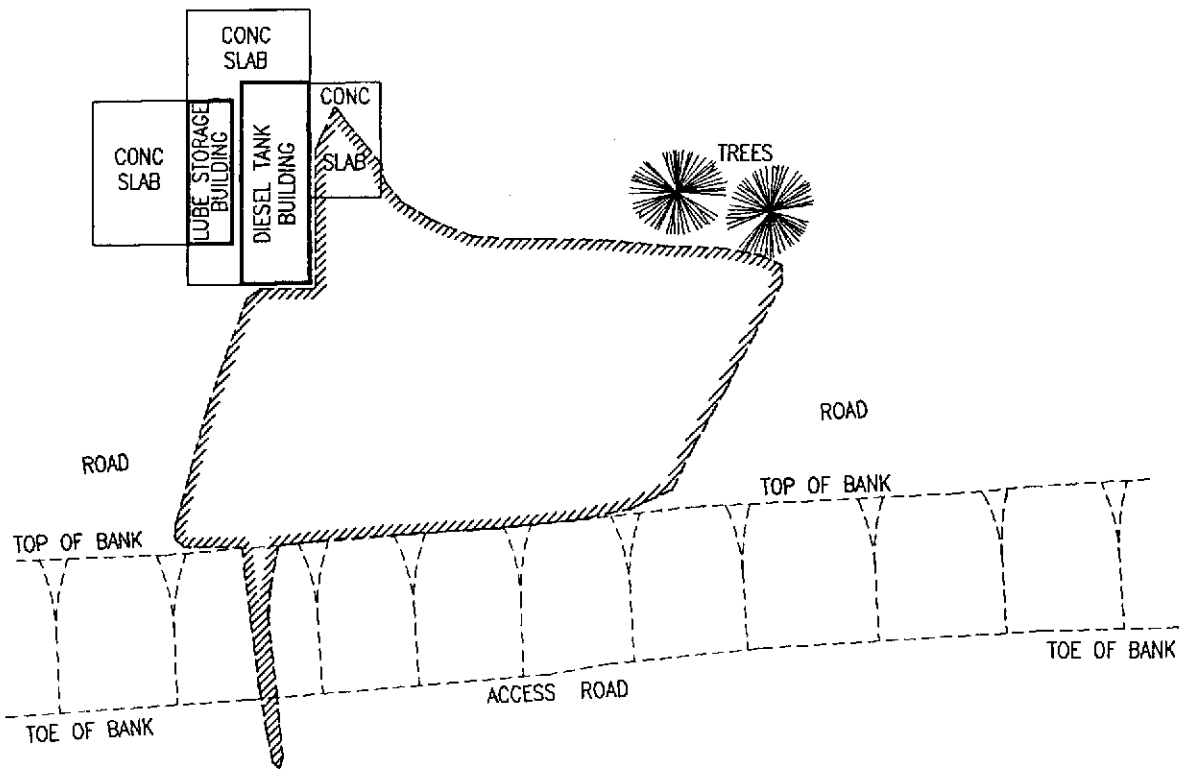
RMC Lonestar
6527 Calaveras Road
Sunol, California

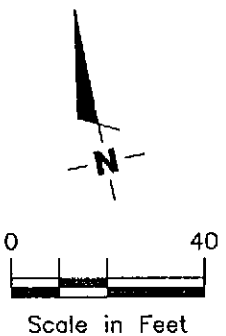
PLATE **1**

JOB NUMBER	REVIEWED BY RG/CEG	DATE	REVISED DATE
7004	CEG 1262	9/90	

EXPLANATION

Approximate surface extent of spill



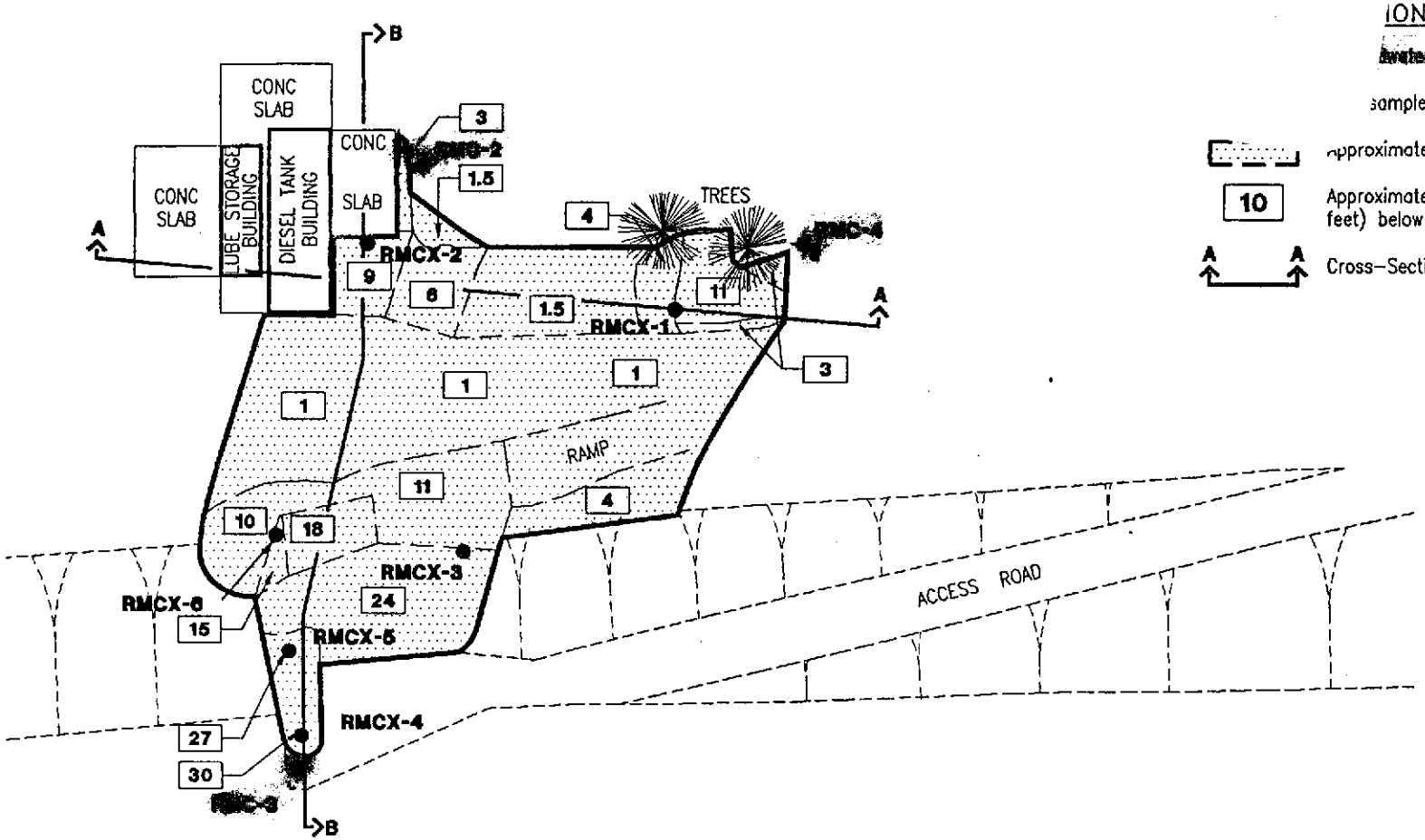


GeoStrategies Inc.

SITE PLAN
RMC Lonestar
6527 Calaveras Road
Sunol, California

PLATE
2

JOB NUMBER	REVIEWED BY RG/CEG	DATE	REVISED DATE
7004	CEG 1262	10/90	

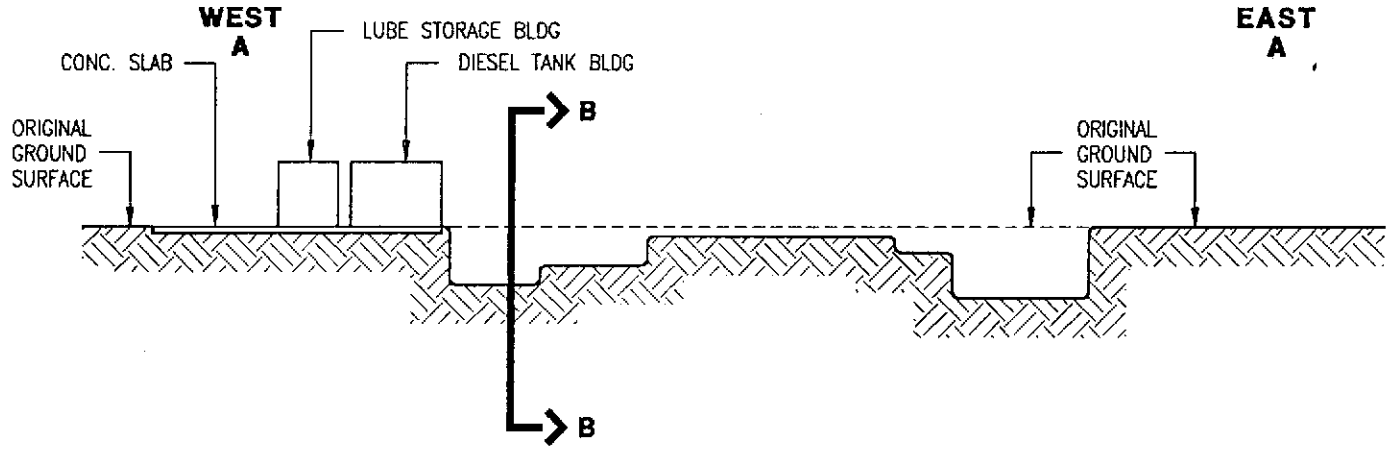


GeoStrategies Inc.

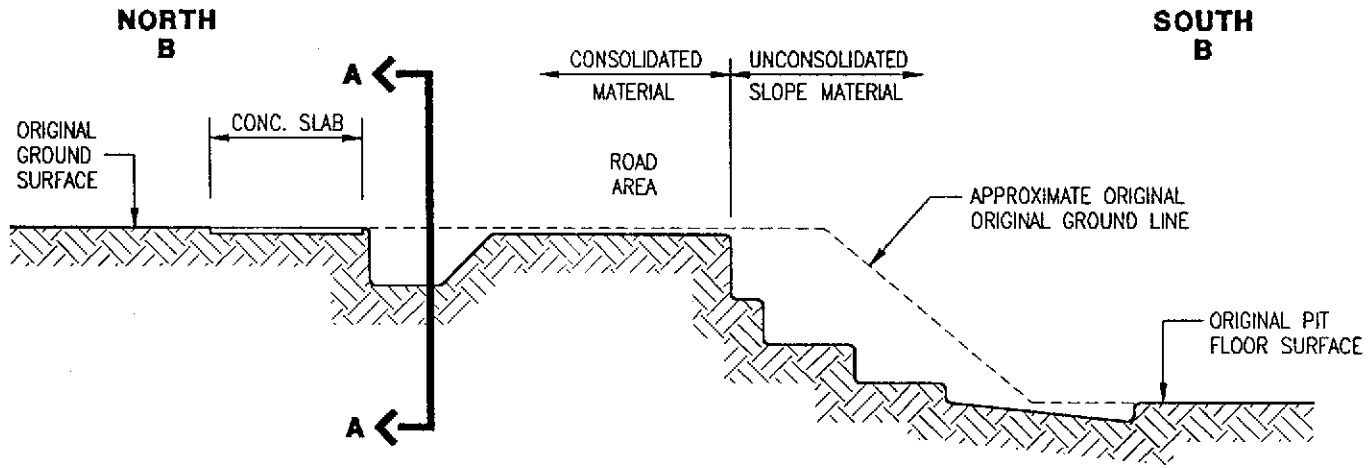
EXCAVATION PLAN (September 7, 1990)
RMC Lonestar
6527 Calaveras Road
Sunol, California

PLATE
3

JOB NUMBER	REVIEWED BY RG/CEG	DATE	REVISED DATE
7004	RG/CEG 12/92	10/90	



CROSS-SECTION A-A



CROSS-SECTION B-B

0 30

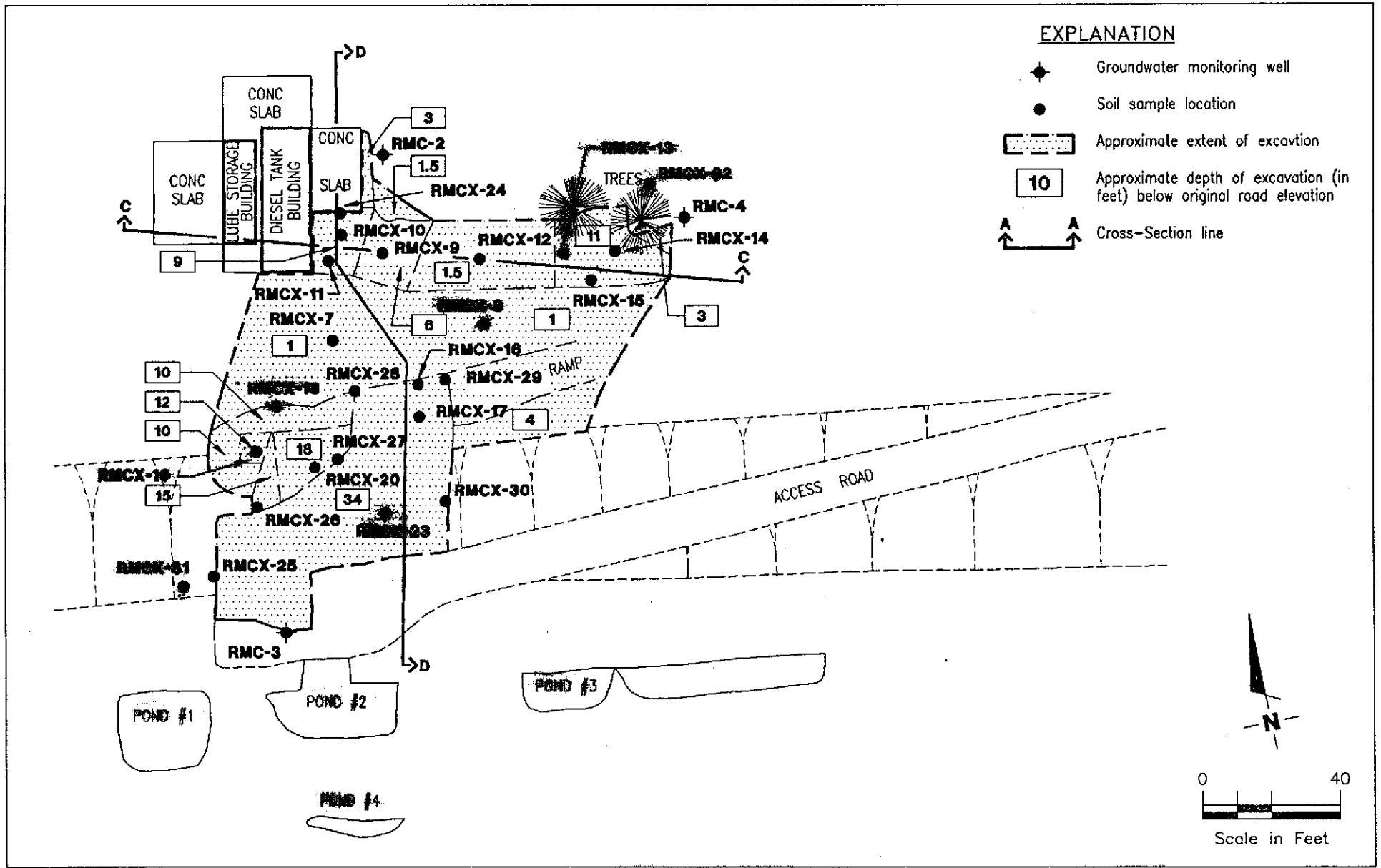
Scale in Feet

GeoStrategies Inc.

CROSS-SECTIONS (September 7, 1990)
RMC Lonestar
6527 Calaveras Road
Sunol, California

PLATE
4

JOB NUMBER	REVIEWED BY RG/CEG	DATE	REVISED DATE
7004	CEG 1262	10/90	

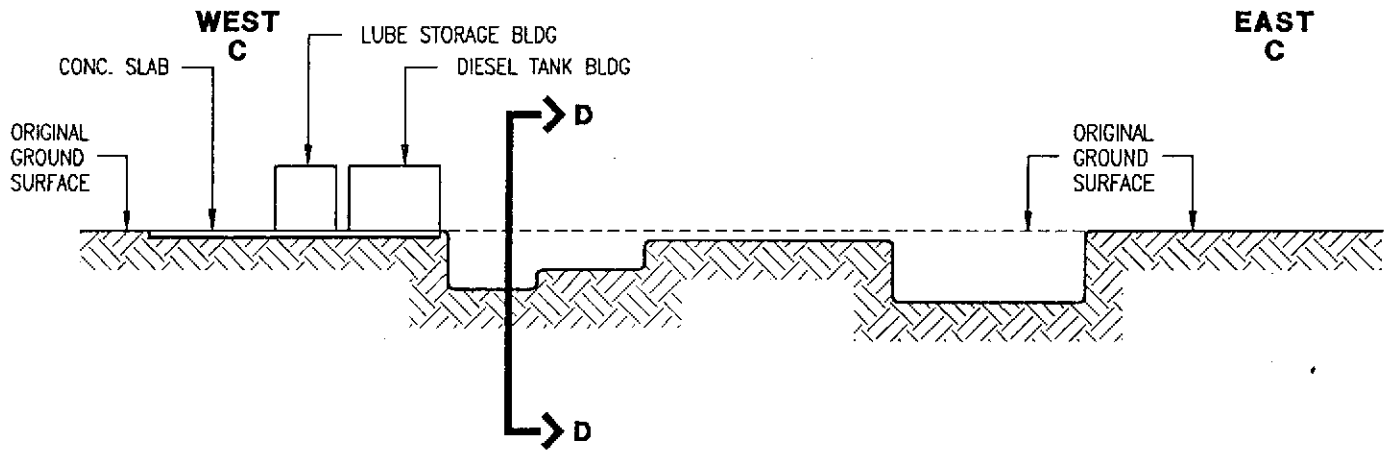


GeoStrategies Inc.

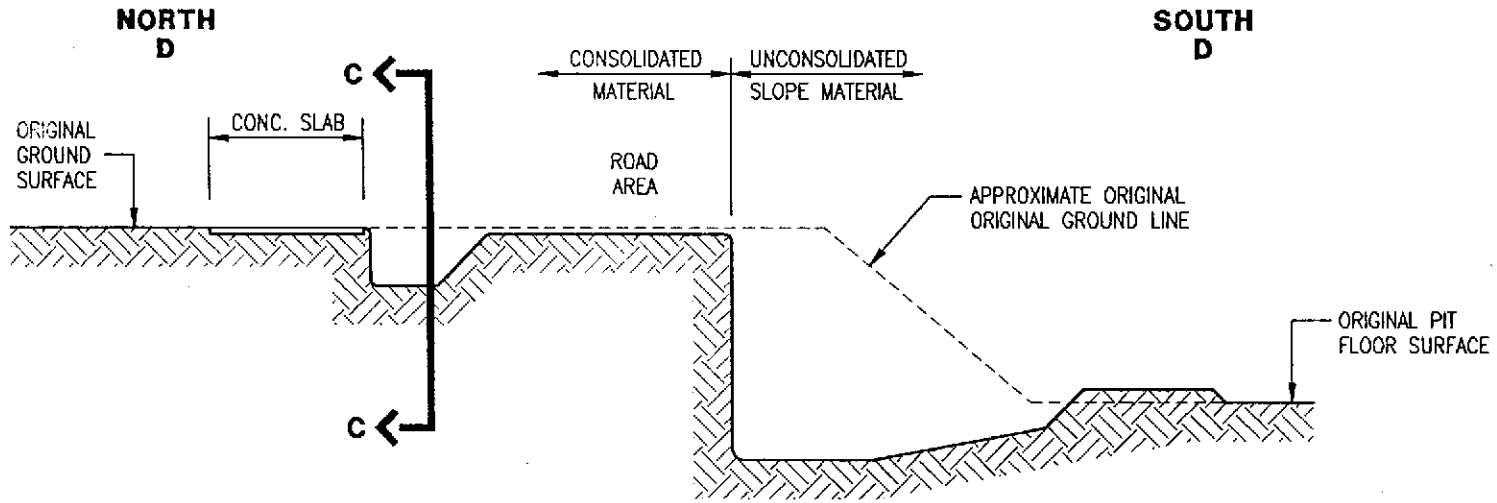
EXTENDED EXCAVATION PLAN (October 12, 1990)
RMC Lonestar
6527 Calaveras Road
Sunol, California

PLATE **5**

JOB NUMBER	REVIEWED BY RG/CEG	DATE	REVISED DATE
7004	CEG 1262	10/90	



CROSS-SECTION C-C



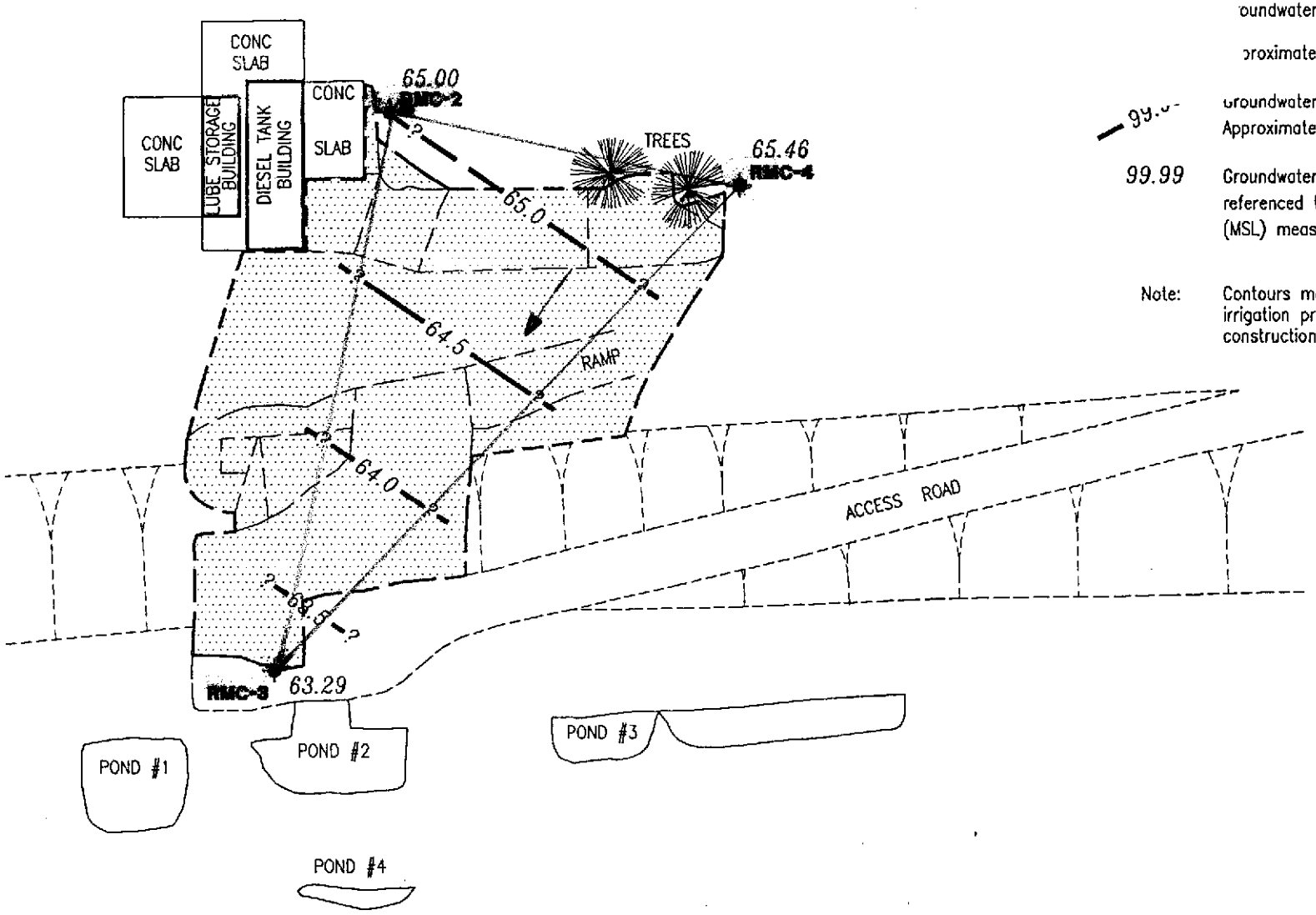
CROSS-SECTION D-D

GeoStrategies Inc.

CROSS-SECTIONS (October 12, 1990)
RMC Lonestar
6527 Calaveras Road
Sunol, California

PLATE
6

JOB NUMBER	REVIEWED BY RG/CEG	DATE	REVISED DATE
7004	CEG 1262	10/90	



NATION

oundwater monitoring well

oroximate extent of excavtion

99.99 — Groundwater elevation contour
Approximate Gradient = 0.013

99.99 — Groundwater elevation in feet referenced to [redacted] Sea Level (MSL) measured on October 5, 1990

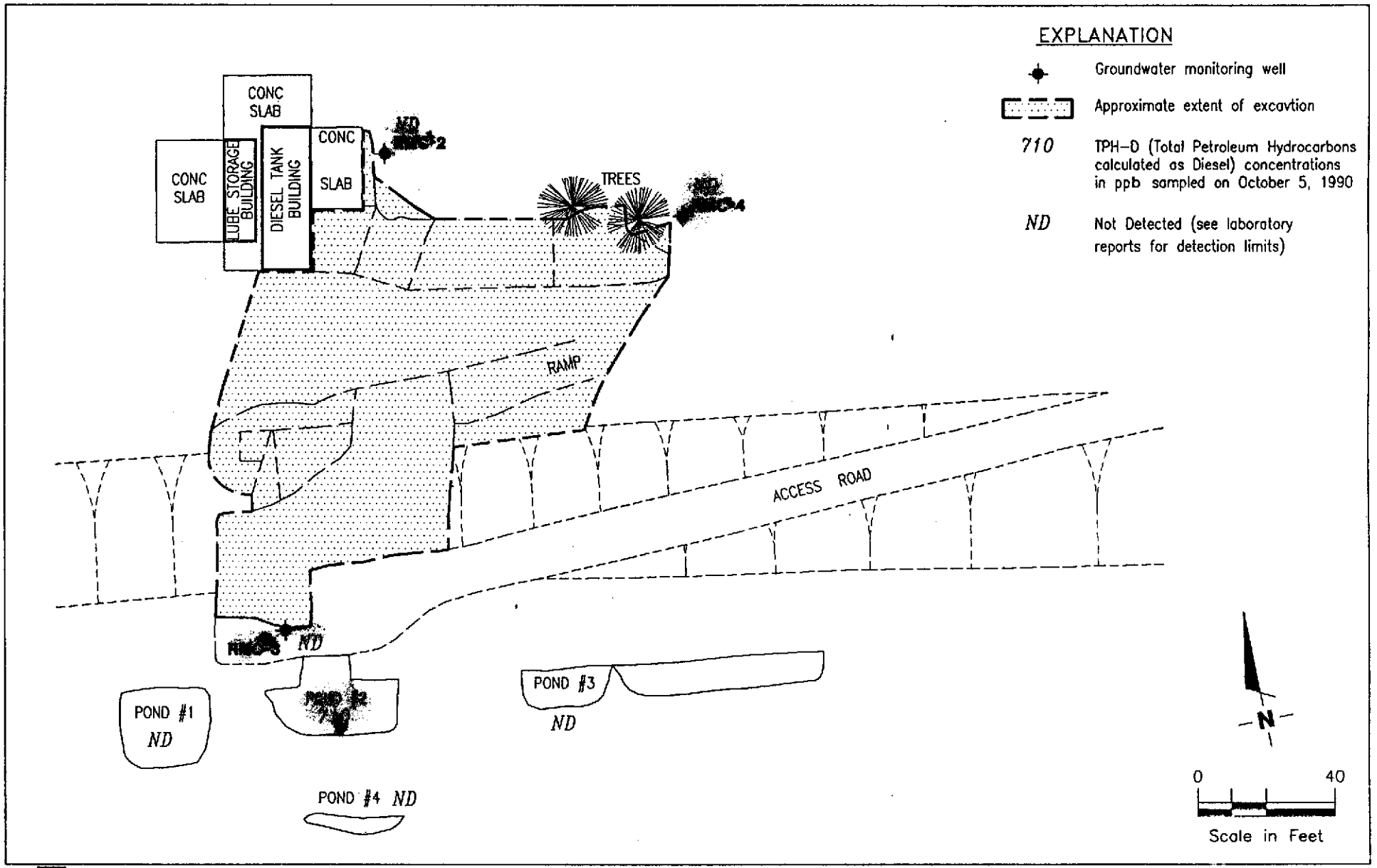
Note: Contours may be influenced by irrigation practices and/or site construction activities.

GeoStrategies Inc.

POTENTIOMETRIC MAP
RMC Lonestar
6527 Calaveras Road
Sunol, California

PLATE
7

JOB NUMBER	REVIEWED BY RG/CEG	DATE	REVISED DATE
7004	[illegible]	10/90	



GeoStrategies Inc.

TPH–D CONCENTRATION MAP
RMC Lonestar
6527 Calaveras Road
Sunol, California

PLATE
8

JOB NUMBER	REVIEWED BY RG/CEG	DATE	REVISED DATE
7004	CEG 12/92	10/90	

APPENDIX A

FIELD METHODS AND PROCEDURES

FIELD METHODS AND PROCEDURES

EXPLORATION DRILLING

Mobilization

Prior to any drilling activities, GeoStrategies Inc. (GSI) will verify that necessary drilling permits have been secured.

Utility locations will be located and drilling will be conducted so as not to disrupt activities at a project site. GSI will obtain and review available public data on subsurface geology and if warranted, the location of wells within a half-mile of the project site will be identified. Drillers will be notified in advance so that drilling equipment can be inspected prior to performing work.

Drilling

The subsurface investigations are typically performed to assess the lateral and vertical extent of petroleum hydrocarbons present in soils and groundwater. Drilling methods will be selected to optimize field data requirements as well as be compatible with known or suspected subsurface geologic conditions.

Monitoring wells are installed using a truck-mounted hollow-stem auger drill rig or mud-rotary drill rig. Typically, the hollow-stem rig is used for wells up to 100 feet, if subsurface conditions are favorable. Wells greater than 100-feet deep are typically drilled using mud-rotary techniques. When mud rotary drilling is used, an electric log will be performed for additional lithological information. Also during mud rotary drilling, precautions will be taken to prevent mud from circulating contaminants by using a conductor casing to seal off contaminated zones. Samples will be collected for lithologic logging by continuous chip, and where needed by drive sample or core as specified by the supervising geologist.

Soil Sampling

Shallow soil borings will be drilled using a truck-mounted hollow-stem auger drilling rig, unless site conditions favor a different drilling method. Drilling and sampling methods will be consistent with ASTM Method D-1452-80. The auger size will be a minimum 6-inch nominal outside-diameter (O.D). No drilling fluids will be used during this drilling method. The augers and other tools used in the bore hole will be steam cleaned before use and between borings to minimize the possibilities of cross-contamination between borings.

Soil samples are typically collected at 5-foot intervals as a minimum from ground surface to total depth of boring. Additional soil samples will be collected based on significant lithologic changes and/or potential chemical content. Soil samples from each sampling interval will be lithologically described by a GSI geologist (Figure 1). Soil colors will be described using the Munsell Color Chart. Rock units will be logged using appropriate lithologic terms, and colors described by the G.S.A. Rock Color Chart.

Head-space analyses will be performed to check for the evidence of volatile organic compounds. Head-space analyses will be performed using an organic vapor analyzer; either an OVA, HNU, or OVM. Organic vapor concentrations will be recorded on the GSI field log of boring (Figure 1). The selection of soil samples for chemical analysis are typically based on the following criteria:

1) Soil discoloration
2) Soil odors
3) Visual confirmation of chemical in soil
4) Depth with respect to underground tanks (or existing grade)
5) Depth with respect to ground water
6) OVA reading

Soil samples (full brass liners) selected for chemical analysis are immediately covered with aluminum foil and the liner ends are capped to prevent volatilization. The samples are labeled and entered onto a Chain-of-Custody form, and placed in a cooler on blue ice for transport to a State-certified analytical laboratory.

Soil cuttings are stockpiled on-site. Soils are sampled and analyzed for site-specific chemical parameters. Disposition of soils is dependent of chemical analytical results of the samples.

Soil Sampling - cont.

Soil borings not converted to monitoring wells will be backfilled (sealed) to ground surface using either a neat cement or cement-bentonite grout mixture. Backfilling will be tremied by continuously pumping grout from the bottom to the top of the boring where depth exceeds 20' or as required by local permit requirements.

All field and office work, including exploratory boring logs, are prepared under the direction of a registered geologist.

Monitoring Well Installation

Monitoring well casing and screen will be constructed of Schedule 40, flush-joint threaded polyvinylchloride (PVC). The well screen will be factory mill-slotted unless additional open area is required (eg. conversion to an extraction well in a low-yield aquifer). The screen length will be placed adjacent to the aquifer material to a minimum of 2-feet above encountered water. No screen shall be placed in a borehole that potentially creates hydraulic interconnection of two or more aquifer units. Screen slot size and well sand pack will be compatible with encountered aquifer materials, as confirmed by sieve analysis.

Monitoring wells will be completed below grade (Figure 2) unless special conditions exist that require above-grade completion design. In the event a monitoring well is required in an aquifer unit beneath an existing aquifer, the upper aquifer will be sealed off by installing a steel conductor casing with an annular neat cement or cement-bentonite grout seal. This seal will be continuously tremie pumped from the bottom of the annulus to ground surface.

The monitoring well sand pack will be placed adjacent to the entire screened interval and will extend a recommended minimum distance of 2-feet above the top of the screen. No sand pack will be placed that interconnects two or more aquifer units. A minimum 2-foot bentonite pellet or bentonite slurry seal will be placed above the sand pack. Sand pack, bentonite, and cement seal levels will be confirmed by sounding the annulus with a calibrated weighted tape. The remaining annular space above the bentonite seal will be grouted with a bentonite-cement mixture and will be tremie-pumped from the bottom of the annular space to the ground surface. The bentonite content of the grout will not exceed 5 percent by weight. A field log of boring and a field well completion form will be prepared by GSI for each well installed.

Decontamination of drilling equipment before drilling and between wells will consist of steam cleaning, and/or Alconox wash.

Well Development

All newly installed wells will be properly developed within 48 hours of completion. No well will be developed until the well seal has set a minimum of 12 hours. Development procedures will include one or more of the methods described below:

Bailing

Bailing will be used to remove suspended sediments and drilling fluids from the well, where applicable. The bailer will be raised and lowered through the column of water in the well so as to create a gentle surging action in the screened interval. This technique may be used in conjunction with other techniques, such as pumping, and may be used alone if the well is of low yield.

Pumping

Pumping will be used in conjunction with bailing or surging. The pump will be operated in such a manner as to gently surge the entire screened interval of the well. This may involve operating the pump with a packer type mechanism attached and slowly raising and lowering the pump, or by cycling the pump off and on to allow water to move in and out of the screened interval. Care will be used not to overpump a well.

Surging

Surging will be performed on wells that are screened in known or suspected high yield formations and/or on larger diameter (recovery) wells. A surge block will be raised and lowered through the entire screened interval, forcing water in and out of the well screen and sand pack. Pumping or air lifting will be used in conjunction with this method of development to remove any sediment brought into the well during surging.

Air Lifting

Air lifting will be used to remove sediment from wells as an alternative to pumping under certain conditions. When appropriate, a surge block designed for use with air lifting will be used to agitate the entire screened interval and water will be lifted out of the well using forced air. When air lifting is performed, the air source will be either nitrogen or filtered air and the procedure will be performed gently to prevent any damage to the well screen or casing and to insure that discharged water is contained.

Well Development - cont.

All well developing equipment will be thoroughly decontaminated prior to development using a steam cleaner and/or Alconox detergent wash and clean water rinse. During development procedures, field parameters (temperature, specific conductance and pH) will be monitored and recorded on well development forms (Figure 3). Equilibration requirements consist of a minimum of three readings with the following accuracy standards:

pH	± 0.1 pH units
Specific Conductance	± 10% of full scale reading
Temperature	± 0.5 degrees Celsius

The wells will be developed until water is visibly clear and free of sediment, and well purging parameters stabilized. A minimum of 8 to 10 well volumes will be purged from each well, if feasible. If well purging parameters have not stabilized before 10 casing volumes have been removed, well development will continue until purging parameters have stabilized and formation water is being drawn into the well. The adequacy of well development will be judged by the field technician performing the well development and based on known formation conditions.

Well Surveying

Monitoring wells will be surveyed to obtain top of box elevations to the nearest ±0.01 foot. Water level measurements will be recorded to the nearest ±0.01 foot and referenced to Mean Sea Level (MSL). If additional wells are required, then existing and newly installed wells are surveyed relative to MSL.

GROUND-WATER SAMPLING AND ANALYSIS

Quality Assurance/Quality Control Objectives

The sampling and analysis procedures employed by Gettler-Ryan Inc. (G-R) for ground-water sampling and monitoring follow specific Quality Assurance/Quality Control (QA/QC) guidelines. Quality Assurance objectives have been established by G-R to develop and implement procedures for obtaining and evaluating water quality and field data in an accurate, precise, and complete manner so that sampling procedures and field measurements provide information that is comparable and representative of actual field conditions. Quality Control (QC) is maintained by G-R by using specific field protocols and requiring the analytical laboratory to perform internal and external QC checks. It is the goal of G-R to provide data that are accurate, precise, complete, comparable, and representative. The definitions for accuracy, precision, completeness, comparability, and representativeness are as follows:

- Accuracy - the degree of agreement of a measurement with an accepted referenced or true value.

- Precision - a measure of agreement among individual measurements under similar conditions. Usually expressed in terms of the standard deviation.

- Completeness - the amount of valid data obtained from a measurement system compared to the amount that was expected to meet the project data goals.

- Comparability - expresses the confidence with which one data set can be compared to another.

- Representativeness - a sample or group of samples that reflects the characteristics of the media at the sampling point. It also includes how well the sampling point represents the actual parameter variations which are under study.

As part of the G-R QA/QC program, applicable federal, state, and local reference guidance documents are followed. The procedures outlined in these regulations, manuals, handbooks, guidance documents, and journals are incorporated into the G-R sampling procedures to assure that; (1) ground-water samples are properly collected, (2) ground-water samples are identified, preserved, and transported in a manner such that they are representative of field conditions, and (3) chemical analysis of samples are accurate and reproducible.

Guidance and Reference Documents Used to Collect Groundwater Samples

These documents are used to verify G-R sampling procedures and are consistent with current regulatory guidance. If site specific work and sampling plans are required, those plans will be developed from these documents, and newly received applicable documents.

U.S.E.P.A. - 330/9-51-002	NEIC Manual for Groundwater/Subsurface Investigation at Hazardous Waste Sites
U.S.E.P.A. - 530/SW611	Procedures Manual for Groundwater Monitoring at Solid Waste Disposal Facilities (August, 1977)
U.S.E.P.A. - 600/4-79-020	Methods for Chemical Analysis of Water and Wastes (1983)
U.S.E.P.A. - 600/4-82-029	Handbook for Sampling and Sample Preservation of Water and Wastewater (1982)
U.S.E.P.A. - 600/4-82-057	Test Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater (July, 1982)
U.S.E.P.A. - SW-846#, 3rd Edition	Test Methods for Evaluating Solid Waste - Physical/Chemical Methods (November, 1986)
40 CFR 136.3e,Table II (Code of Federal Regulations)	Required Containers, Preservation Techniques, and Holding Times
Resources Conservation and Recover Act (OSWER 9950.1)	Groundwater Monitoring Technical Enforcement Guidance Document (September, 1986)
California Regional Water Quality Control Board (Central Valley Region)	A Compilation of Water Quality Goals (September, 1988); Updates (October, 1988)
California Regional Water Quality Control Board (North Coast, San Francisco Bay, and Central Valley)	Regional Board Staff Recommendations for Initial Evaluations and Investigation of Underground Tanks: Tri-Regional Recommendations (June, 1988)

Guidance and Reference Documents Used to Collect Groundwater Samples (cont.)

Regional Water Quality Control Board (Central Valley Region)	Memorandum: Disposal, Treatment, and Refuse of Soils Contaminated with Petroleum Fractions (August, 1986)
State of California Department of Health Services	Hazardous Waste Testing Laboratory Certification List (March, 1987)
State of California Water Resources Control Board	Leaking Underground Fuel Tank (LUFT) Field Manual (May, 1988), and LUFT Field Manual Revision (April, 1989)
State of California Water Resources Control Board	Title 23, (Register #85.#33-8-17-85), Subchapter 16: Underground Tank Regulations; Article 3, Sections 2632 and 2634; Article 4, Sections 2645, 2646, 2647, and 2648; Article 7, Sections 2670, 2671, and 2672 (October, 1986: including 1988 Amendments)
Alameda County Water District	Groundwater Protection Program: Guidelines for Groundwater and Soil Investigations at Leaking Underground Fuel Tank Sites (November, 1988)
American Public Health Association	Standard Methods for the Examination of Water and Wastewaters, 16th Edition
Analytical Chemistry (journal)	Principles of Environmental Analysis, Volume 55, Pages 2212-2218 (December, 1983)
Napa County	Napa County Underground Storage Tank Program: Guidelines for Site Investigations; February 1989.
Santa Clara Valley Water District	Guidelines for Preparing or Reviewing Sampling Plans for Soil and Groundwater Investigation of Fuel Contamination Sites (January, 1989)

Guidance and Reference Documents Used to Collect Groundwater Samples (cont.)

Santa Clara Valley Water District	Investigation and Remediation at Fuel Leak sites: Guidelines for Investigation and Technical Report Preparation (March 1989)
Santa Clara Valley Water District	Revised Well Standards for Santa Clara County (July 18, 1989)
American Petroleum Institute	Groundwater Monitoring & Sample Bias; API Publication 4367, Environmental Affairs Department, June 1983
American Petroleum Institute	A Guide to the Assessment and Remediation of Underground Petroleum Releases; API Publication 1628, February 1989
American Petroleum Institute	Literature Summary: Hydrocarbon Solubilities and Attenuations Mechanisms, API Publication 4414, August 1985
Site Specific (as needed)	General and specific regulatory documents as required.

Because ground-water samples collected by G-R are analyzed to the parts per billion (ppb) range for many compounds, extreme care is exercised to prevent contamination of samples. When volatile or semi-volatile organic compounds are included for analysis, G-R sampling crew members will adhere to the following precautions in the field:

1. A clean pair of new, disposable gloves are worn for each well being sampled.

2. When possible, samples are collected from known or suspected wells that are least contaminated (i.e. background) followed by wells in increasing order of contamination.

3. Ambient conditions are continually monitored to maintain sample integrity.

When known or potential organic compounds are being sampled for, the following additional precautions are taken:

1. All sample bottles and equipment are kept away from fuels and solvents. When possible, gasoline (used in generators) is stored away from bailers, sample bottles, purging pumps, etc.

2. Bailers are made of Teflon or Stainless Steel. Other materials such as plastic may contaminate samples with phthalate esters which interfere with many Gas Chromatography (GC) analyses.

3. Volatile organic ground-water samples are collected so that air passage through the sample does not occur or is minimal (to prevent volatiles from being stripped from the samples): sample bottles are filled by slowly running the sample down the side of the bottle until there is a positive convex meniscus over the neck of the bottle; the Teflon side of the septum (in cap) is positioned against the meniscus, and the cap screwed on tightly; the sample is inverted and the bottle lightly tapped. The absence of an air bubble indicates a successful seal; if a bubble is evident, the cap is removed, more sample is added, and the bottle is resealed.

4. Extra Teflon seals are brought into the field in case seals are difficult to handle and/or are dropped. Dropped seals are considered contaminated and are not used. When replacing seals or if seals become flipped, care is taken to assure that the Teflon seal faces down.

Sample analysis methods, containers, preservatives and holding times are shown on Table 1.

Laboratory and field handling procedures of samples are monitored by including QC samples for analysis with every submitted sample lot from a project site. QC samples may include any combination of the following:

A. Trip Blank: Used for purgeable organic compounds only; QC samples are collected in 40 milliliter (ml) sample vials filled in the analytical laboratory with organic-free water. Trip blanks are sent to the project site, and travel with project site samples. Trip blanks are not opened, and are returned from a project site with the project site samples for analysis.

B. Field Blank: Prepared in the field using organic-free water. These QC samples accompany project site samples to the laboratory and are analyzed for specific chemical parameters unique to the project site where they were prepared.

C. Duplicates: Duplicated samples are collected "second samples" from a selected well and project site. They are collected as either split samples or second-run samples collected from the same well.

D. Equipment Blank: Periodic QC sample collected from field equipment rinsate to verify decontamination procedures.

The number and types of QC samples are determined as follows:

A. Up to 2 wells - Trip Blank Only

B. 2 to 5 Wells - 1 Field Blank and 1 Trip Blank

C. 5 to 10 Wells - 1 Field blank, 1 Trip Blank, and 1 Duplicate

D. More than 10 Wells - 1 Field Blank, 1 Trip Blank, and 1 Duplicate per each 12 wells

E. If sampling extends beyond one day, quality control samples will be collected for each day.

Additional QC is performed through ongoing and random reviews of duplicate samples to evaluate the precision of the field sampling procedures and analytical laboratory. Precision of QC data is accomplished by calculating the Relative Percent Difference (RPD). The RPD is evaluated to assess whether values are within an acceptable range (typically ± 20% of duplicate sample).

SAMPLE COLLECTION

This section describes the routine procedures followed by G-R while collecting ground-water samples for chemical analysis. These procedures include decontamination, water-level measurements, well purging, physical parameter measurements, sample collection, sample preservation, sample handling, and sample documentation. Critical sampling objectives for G-R are to:

1. Collect ground-water samples that are representative of the sampled matrix and,

2. Maintain sample integrity from the time of sample collection to receipt by the analytical laboratory.

Sample analyses methods, containers, preservation, and holding times are presented in Table 1.

Decontamination Procedures

All physical parameter measuring and sampling equipment are decontaminated prior to sample collection using Alconox or equivalent detergent followed by steam cleaning with deionized water. Any sampling equipment surfaces or parts that might absorb specific contaminants, such as plastic pump valves, impellers, etc., are cleaned in the same manner.

Sample bottles, bottle caps, and septa used for sampling volatile organics are thoroughly cleaned and prepared in the laboratory. Sample bottles, bottle caps, and septa are protected from all potential chemical contact before actual usage at a sample location.

During field sampling, equipment placed in a well are decontaminated before purging or sampling the next well. The equipment are decontaminated by cleaning with Alconox or equivalent detergent followed by steam cleaning with deionized water.

Water-Level Measurements

Prior to purging and sampling a well, the static-water levels are measured in all wells at a project site using an electric sounder and/or calibrated portable oil-water interface probe (Figure 4). Both static water-level and separate-phase product thickness are measured to the nearest ±0.01 foot. The presence of separate-phase product is confirmed using a clean, acrylic or polyvinylchloride (PVC) bailer, measured to the nearest ±0.01 foot with a decimal scale tape.

Water-Level Measurements (continued)

The monofilament line used to lower the bailer is replaced between wells with new line to preclude the possibility of cross-contamination. Field observations (e.g. well integrity, product color, turbidity, water color, odors, etc.) are noted on the G-R Well Sampling Field Data Sheet shown in Figure 4. Before and after each use, the electric sounder, interface probe and bailer are decontaminated by washing with Alconox or equivalent detergent followed by rinsing with deionized water to prevent cross-contamination.

As mentioned previously, water-levels are measured in wells with known or suspected lowest dissolved chemical concentrations to the highest dissolved concentrations.

Well Purging

Before sampling occurs, well casing storage water and interstitial water in the artificial sand pack will be purged using (1) a positive displacement bladder pump constructed of inert, non-wetting, Teflon and stainless steel, (2) a pneumatic-airlift pumping system, (3) a centrifigal pumping system, or (4) a Teflon or Stainless steel bailer (Figure 5). Methods of purging will be assessed based on well size, location, accessibility, and known chemical conditions. Individual well purge volumes are calculated from borehole volumes which take into account the sand packed interval in the well annular space. As a general rule, a minimum of 3 and a maximum of 10 borehole volumes will be purged. Wells which dewater or demonstrate slow recharge periods (i.e. low-yield wells) during purging activities may be sampled after fewer purging cycles. If a low-yield (low recovery) well is to be sampled, sampling will not take place until at least 80 percent of the previously measured water column has been replaced by recharge, or as per local requirements. Physical parameter measurements (temperature, pH, and specific conductance) are closely monitored throughout the well purging process and are used by the G-R sampling crew as indicators for assessing sufficient purging. Purging is continued until all three physical parameters have stabilized. Specific conductance (conductivity) meters are read to the nearest ± 10 umhos/cm, and are calibrated daily. pH meters are read to the nearest ± 0.1 pH units and are calibrated daily. Temperature is read to the nearest 0.1 degree F. Calibration of physical parameter meters will follow manufacturers specifications. Monitoring wells will be purged according to the protocol presented in Figure 5. Collected field data during purging activities will be entered on the G-R Well Sampling Field Data Sheet shown in Figure 4. Copies of the G-R Field Data Sheets will be reviewed by the G-R Sampling Manager for accuracy and completeness.

DOCUMENTATION

Sample Container Labels

Each sample container will be labeled by an adhesive label, noted in permanent ink immediately after the sample is collected. Label information will include:

Sample point designation (i.e. well number or code)

Sampler's identification

Project number

Date and time of collection

Type of preservation used

Well Sampling Data Forms

In the field, the G-R sampling crew will record the following information on the Well Sampling Data Sheet for each sample collected:

Project number

Client

Location

Source (i.e. well number)

Time and date

Well accessibility and integrity

Pertinent well data (e.g. depth, product thickness, static water-level, pH, specific conductance, temperature)

Calculated and actual purge volumes

Chain-of-Custody

A Chain-of-Custody record (Figure 6) shall be completed and accompany every sample and every shipment of samples to the analytical laboratory in order to establish the documentation necessary to trace sample possession from time of collections. The record will contain the following information:

- Sample or station number or sample identification (ID)
- Signature of collector, sampler, or recorder
- Date and time of collection
- Place of collection
- Sample type
- Signatures of persons involved in chain of possession
- Inclusive dates of possession

Samples shall always be accompanied by a Chain-of-Custody record. When transferring the samples, the individual relinquishing and receiving the samples will sign, date, and note the time on the Chain-of-Custody record. G-R will be responsible for notifying the laboratory coordinator when and how many samples will be sent to the laboratory for analysis, and what types of analyses shall be performed.

TABLE 1

SAMPLE ANALYSIS METHODS, CONTAINERS, PRESERVATIONS, AND HOLDING TIMES

Parameter	Analytical Method	Reporting Units	Container	Preservation	Maximum Holding Time
Total Petroleum Hydrocarbons (Gasoline)	EPA 8015 (modified)	mg/l ug/l	40 ml. vial glass, Teflon	cool, 4 C HCl to pH<2	14 days (maximum)
Benzene Toluene Ethylbenzene Xylenes (BTEX	EPA 8020	mg/l ug/l	50 ml. vial glass, Teflon lined septum	cool, 4 C HCl to pH<2	7 days (w/o preservative) 14 days (w preservative)
Oil & Grease	SM 503E	mg/l ug/l	1 l glass, Teflon lined septum	H2SO4 or HCl to pH<2	28 days (maximum)
Total Petroleum Hydrocarbons (Diesel)	EPA 8015 (modified)	mg/l ug/l	40 ml. vial glass, Teflon lined septum	cool, 4 C	14 days (maximum)
Halogented Volatile Organics (chlorinated solvents)	8010	mg/l ug/l	40 ml. vial glass, Teflon lined septum	cool, 4 C	14 days (maximum)
Non chlorinated solvents	8020	mg/l ug/l	40 ml. vial glass, Teflon lined septum	cool, 4 C HCl to pH<2	14 days (maximum)
Volatile Organics	8240	mg/l ug/l	40 ml. vial glass, Teflon lined septum	cool, 4 C HCl to pH<2	14 days (maximum)
Semi-Volatile Organics	8270	mg/l ug/l	1 l amber glass, Teflon lined septum	cool, 4 C	7 days extract 40 days (maximum to analyze)
Specific Conductance (Field test)		umhos/cm			
pH (Field test)		pH units			
Temperature (Field test)		Deg F			

GeoStrategies Inc.

FIELD EXPLORATORY BORING LOG

FIGURE 1

Field location of boring:	Project No.:	Date:	Boring No:
	Client:		
	Location:		
	City:		Sheet
	Logged by:	Driller:	of
	Casing installation data:		
Drilling method:			
Hole diameter:	Top of Box Elevation:		Datum:

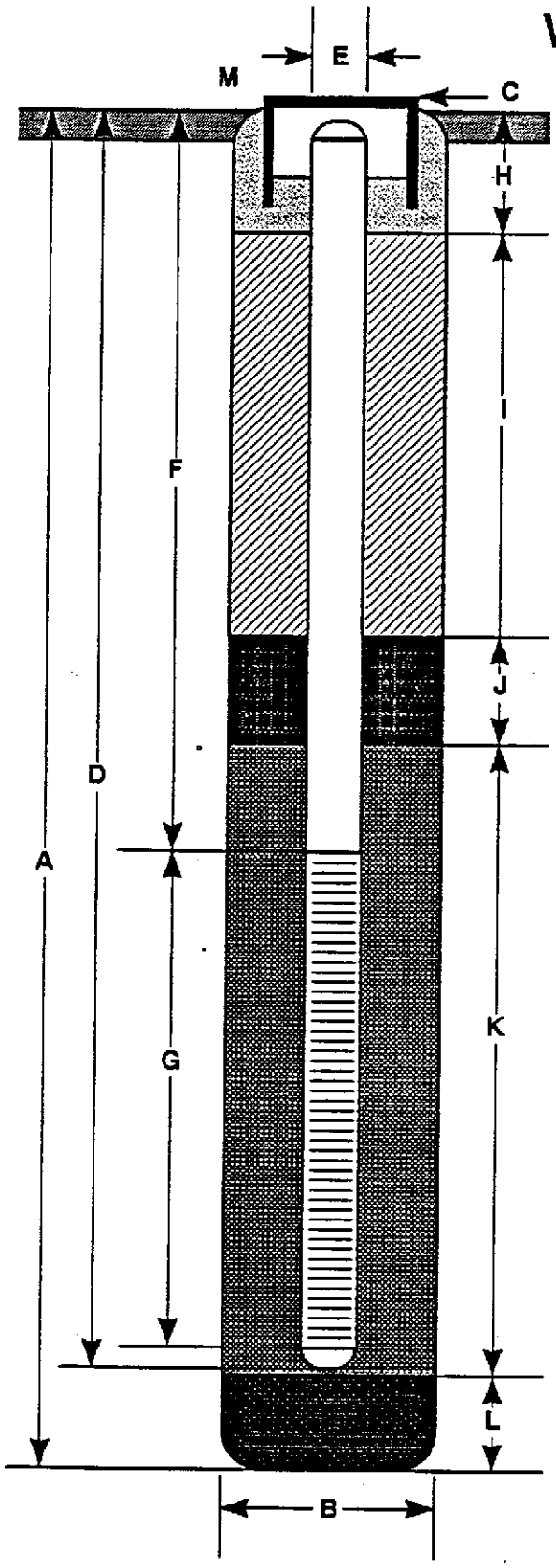
							Water Level		
							Time		
							Date		

PID (ppm)	Blows/ft. or Pressure (psi)	Type of Sample	Sample Number	Depth (ft.)	Sample	Well Detail	Soil Group Symbol (USCS)	Description

Remarks:

WELL CONSTRUCTION DETAIL

FIGURE 2



A Total Depth of Boring _____ ft.

B Diameter of Boring _____ in.
Drilling Method _____

C Top of Box Elevation _____ ft.
☐ Referenced to Mean Sea Level
☐ Referenced to Project Datum

D Casing Length _____ ft.
Material _____

E Casing Diameter _____ in.

F Depth to Top Perforations _____ ft.

G Perforated Length _____ ft.
Perforated Interval from _____ to _____ ft.
Perforation Type _____
Perforation Size _____ in.

H Surface Seal from _____ to _____ ft.
Seal Material _____

I Backfill from _____ to _____ ft.
Backfill Material _____

J Seal from _____ to _____ ft.
Seal Material _____

K Gravel Pack from _____ to _____ ft.
Pack Material _____

L Bottom Seal _____ ft.
Seal Material _____

M _____

Note: Depths measured from initial ground surface

GSI GeoStrategies Inc.

Well Construction Detail

WELL NO.

JOB NUMBER	REVIEWED BY RG/CEG	DATE	REVISED DATE	REVISED DATE

WELL DEVELOPMENT FORM FIGURE 3

Page_____ of_____

(to be filled out in office)

Client_____ SS#_____ Job#_____

Name_____ Location_____

Well#_____ Screened Interval_____ Depth_____

Aquifer Material_____ Installation Date _____

Drilling Method_____ Borehole Diameter_____

Comments regarding well installation:_____

(to be filled out in the field) Name_____

Date_____ Development Method_____

Total Depth_____ - Depth to liquid_____ = WaterColumn_____

Product thickness_____

_____ x _____ x _____ x 0.0408 = _____gals
Water Column Diameter (in.) #Vol

Purge Start_____ Stop_____ Rate_____ gpm

Gallons	Time	Clarity	Temp.	pH	Conductivity
0					

Total gallons removed_____ Development stop time_____

Depth to liquid _____at_____(time)

Odor of water_____ Water discharged to_____

Comments_____

GETTLER–RYAN INC.

General and Environmental Contractors

WELL SAMPLING FIELD DATA SHEET

FIGURE 4

COMPANY _____ JOB # _____

LOCATION _____ DATE _____

CITY _____ TIME _____

Well ID. _____ Well Condition _____

Well Diameter _____ in. Hydrocarbon Thickness _____ ft.

Total Depth _____ ft.

Depth to Liquid- _____ ft.

Volume Factor (VF)			
	2" = 0.17	6" = 1.50	12" = 5.80
	3" = 0.38	8" = 2.60	
	4" = 0.66	10" = 4.10	

(# of casing volumes) _____ x _____ x(VF) _____ = (Estimated Purge Volume) _____ gal.

Purging Equipment _____

Sampling Equipment _____

Starting Time _____ Purging Flow Rate _____ gpm.

(Estimated Purge Volume) _____ gal. / (Purging Flow Rate) _____ gpm. = (Anticipated Purging Time) _____ min.

Time	pH	Conductivity	Temperature	Volume

Did well dewater? _____ If yes, time _____ Volume _____

Sampling Time _____ Weather Conditions _____

Analysis _____ Bottles Used _____

Chain of Custody Number _____

COMMENTS _____

FOREMAN _____ ASSISTANT _____

FIGURE 5

Monitoring Well Sampling Protocol Schematic

Sampling Crew Reviews Project Sampling Requirements/Schedule

↓

Field Decontamination and Instrumentation Calibration

↓

Check Integrity of Well (Inspect for Well Damage)

↓

Measure and Record Depth to Water and Total Well Depth (Electric Well Sounder)

↓

Check for Floating Product (Oil/Water Interface Probe)

Floating Product Present

↓

Confirm Product Thickness (Acrylic or PVC Bailer)

↓

Collect Free-Product Sample

↓

Dissolved Product Sample Not Required

↓

Record Data on Field Data Form

Floating Product Not Present

↓

Purge Volume Calculation

$V = \pi (r/12)^2 h(\_\% \text{ vol})(7.48) = \_\_\_ / \text{gallons}$

V = Purge volume (gallons)

$\pi = 3.14159$

h = Height of Water Column (feet)

r = Borehole radius (inches)

↓

Evacuate water from well equal to the calculated purge volume while monitoring groundwater stabilization indicator parameters (pH, conductivity, temperature) at intervals of one casing volume.

Well Dewaters after One Purge Volume (Low yield well)

↓

Well Recharges to 80% of Initial Measured Water Column Height in Feet within 24 hrs. of Evacuation.

↓

Measure Groundwater Stability Indicator Parameters (pH, Temperature, Conductivity)

↓

Collect Sample and Complete Chain-of-Custody

↓

Preserve Sample According to Required Chemical Analysis

↓

Transport to Analytical Laboratory

Well Readily Recovers

↓

Record Groundwater Stability Indicator Parameters from each Additional Purge Volume

Stability indicated when the following Criteria are met:

pH :	± 0.1 pH units
Conductivity:	± 10%
Temperature:	1.0 degrees F

Groundwater Stability Achieved

↓

Collect Sample and Complete Chain-of-Custody

↓

Preserve Sample According to Required Chemical Analysis

↓

Transport to Analytical Laboratory

Groundwater Stability Not Achieved

↓

Continue Purging Until Stability is Achieved

↓

Collect Sample and complete Chain-of-Custody

↓

Preserve Sample According to Required Chemical Analysis

↓

Transport to Analytical Laboratory

Gettler - Ryan Inc.
ENVIRONMENTAL DIVISION

Chain of Custody
FIGURE 6

COMPANY _____ JOB NO. _____

JOB LOCATION _____

CITY _____ PHONE NO. _____

AUTHORIZED _____ DATE _____ P.O. NO. _____

SAMPLE ID	NO. OF CONTAINERS	SAMPLE MATRIX	DATE/TIME SAMPLED	ANALYSIS REQUIRED	SAMPLE CONDITION LAB ID

RELINQUISHED BY: _____ RECEIVED BY: _____

RELINQUISHED BY: _____ RECEIVED BY: _____

RELINQUISHED BY: _____ RECEIVED BY LAB: _____

DESIGNATED LABORATORY: _____ DHS #: _____

REMARKS: _____

DATE COMPLETED _____ FOREMAN _____

APPENDIX B
EXPLORATORY BORING LOGS
WELL CONSTRUCTION DETAILS

MAJOR DIVISIONS					TYPICAL NAMES
COARSE-GRAINED SOILS MORE THAN HALF IS COARSER THAN NO. 200 SIEVE	GRAVELS MORE THAN HALF COARSE FRACTION IS LARGER THAN NO. 4 SIEVE SIZE	CLEAN GRAVELS WITH LITTLE OR NO FINES	GW		WELL GRADED GRAVELS WITH OR WITHOUT SAND, LITTLE OR NO FINES
			GP		POORLY GRADED GRAVELS WITH OR WITHOUT SAND, LITTLE OR NO FINES
		GRAVELS WITH OVER 15% FINES	GM		SILTY GRAVELS, SILTY GRAVELS WITH SAND
			GC		CLAYEY GRAVELS, CLAYEY GRAVELS WITH SAND
	SANDS MORE THAN HALF COARSE FRACTION IS SMALLER THAN NO. 4 SIEVE SIZE	CLEAN SANDS WITH LITTLE OR NO FINES	SW		WELL GRADED SANDS WITH OR WITHOUT GRAVEL, LITTLE OR NO FINES
			SP		POORLY GRADED SANDS WITH OR WITHOUT GRAVEL, LITTLE OR NO FINES
		SANDS WITH OVER 15% FINES	SM		SILTY SANDS WITH OR WITHOUT GRAVEL
			SC		CLAYEY SANDS WITH OR WITHOUT GRAVEL
FINE-GRAINED SOILS MORE THAN HALF IS FINER THAN NO. 200 SIEVE	SILTS AND CLAYS LIQUID LIMIT 50% OR LESS		ML		INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTS WITH SANDS AND GRAVELS
			CL		INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY CLAYS WITH SANDS AND GRAVELS, LEAN CLAYS
			OL		ORGANIC SILTS OR CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS LIQUID LIMIT GREATER THAN 50%		MH		INORGANIC SILTS, MICACEOUS OR DIATOMACIOUS, FINE SANDY OR SILTY SOILS, ELASTIC SILTS
			CH		INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
			OH		ORGANIC SILTS OR CLAYS OF MEDIUM TO HIGH PLASTICITY
HIGHLY ORGANIC SOILS			PT		PEAT AND OTHER HIGHLY ORGANIC SOILS

Perm	- Permeability
Consol	- Consolidation
LL	- Liquid Limit (%)
PI	- Plastic Index (%)
G_s	- Specific Gravity
MA	- Particle Size Analysis
2.5 YR 6/2	- Soil Color according to Munsell Soil Color Charts (1975 Edition)
5 GY 5/2	- GSA Rock Color Chart

☒	- No Soil Sample Recoverd
■	- "Undisturbed" Sample
⊠	- Bulk or Classification Sample
▽	- First Encountered Ground Water Level
▼	- Piezometric Ground Water Level
Penetration	- Sample drive hammer weight - 140 pounds falling 30 inches. Blows required to drive sampler 1 foot are indicated on the logs

GeoStrategies Inc.

Unified Soil Classification - ASTM D 2488-85 and Key to Test Data

Field location of boring:

(See Plate 3)

Project No.:	70[illegible]	Date: 09/14/90	Boring No: [illegible]-2
Client:	RMC Lonestar		
Location:	6527 Calaveras Road		
City:	Sunol, California		Sheet 1 of 3
Logged by:	S.J.Carter	Driller: Bayland	

Drilling method: Hollow-Stem Auger

Hole diameter: 8-Inches

Casing installation data: (See Well Construction Detail)

Top of Box Elevation: 100.00 Datum: Project Datum

Water Level	38'	32'	31.9'	32'
Time	15:00	18:40	9:30	13:30
Date	09/14/90	09/14/90	09/25/90	09/25/90

PID (ppm)	Blows/ft. or Pressure (psi)	Type of Sample	Sample Number	Depth (ft.)	Description
	10	S&H		4	GRAVELLY CLAY (CL) - dark grayish brown (10YR 4/2),
	11		RMC2-		damp, very stiff, low plasticity; 60% clay; 30% fine to
0	15		5	5	coarse gravel; 10% sand; no chemical odor.
	4	S&H		9	CLAY (CL) - dark gray (N4/), medium stiff, moist, low
	4		RMC2-		plasticity; 100% clay; trace coarse sand to fine gravel; no
0	2		10	10	chemical odor.
	8	S&H		14	GRAVEL with SAND (GW-GC) - grayish brown (10YR
	13		RMC2-		5/2), medium dense, moist; 70% fine to coarse gravel;
0	13		15	15	25% fine to coarse sand; 5% clay; no chemical odor.
	5	S&H		19	SAND (SP) - light olive brown (2.5Y 5/4), medium dense,
	7		RMC2-		moist; 90% fine to medium sand; 10% fine gravel; no
0	14		20	20	chemical odor. Increasing gravel in shoe. Sand surface
					wet, but no free water.

Remarks:

GeoStrategies Inc.

Log of Boring

BORING NO. RMC-2

JOB NUMBER	REVIEWED BY RG/CEG	DATE	REVISED DATE	REVISED DATE
7004	RMP CEG 1262	09/90		

Field location of boring:

(See Plate 3)

Project No.:	7004	Date:	09/14/90
Client:	RMC Lonestar		
Location:	6527 Calaveras Road		
City:	Sunol, California		
Logged by:	S.J.Carter	Driller:	Bayland

Boring No.: [redacted]

Sheet 2 of 3

Drilling method: Hollow Stem Auger

Hole diameter: 8-Inches

Casing installation data:

Top of Box Elevation: Datum:

Water Level				
Time				
Date				

PID (ppm)	Blows/ft. or Pressure (psi)	Type of Sample	Sample Number	Depth (ft.)	Sample	Well Detail	Soil Group Symbol (USCS)	Description
				21				
				22				
				23				
	10	S&H		24				GRAVEL with CLAY and SAND (GW-GC) - dark grayish brown (10YR 5/2), dense, moist; 70% fine to coarse gravel; 20% fine to coarse sand; 10% clay; no chemical odor.
	17		RMC2-					
0	17		25	25				
				26				
				27				
				28				
0	12	S&H	RMC2-	29				No chemical odor.
	21		30	30				Hard drilling at 30.0 feet.
	24			31				
				32		▼		
				33				Easy drilling at 33.0 feet.
				34				Hard drilling at 33.5 feet.
				35				
				36				
				37				Easy drilling at 37.0 feet.
				38		▼		
	2	S&H		39				Saturated at 38.5 feet; medium dense; no chemical odor.
	2							
	12			40				

Remarks:

GeoStrategies Inc.

Log of Boring

BORING NO.

RMC-2

JOB NUMBER	REVIEWED BY RG/CEG	DATE	REVISED DATE	REVISED DATE
7004	CMP REG 1260	09/90		

Field location of boring:

(See Plate 3)

Project No.: 7004	Date: 09/14/90	Boring No: [redacted]-2	
Client: RMC Lonestar			
Location: 6527 Calaveras Road			
City: Sunol, California		Sheet 3	
Logged by: S.J.Carter	Driller: Bayland	of 3	

Drilling method: Hollow-Stem Auger

Hole diameter: 8-Inches

Casing installation data:

Top of Box Elevation: Datum:

Water Level				
Time				
Date				

PID (ppm)	Blows/ft. or Pressure (psi)	Type of Sample	Sample Number	Depth (ft.)	Sample	Well Detail	Soil Group Symbol (USCS)	Description
				41				
				42				
				43				
	16	S&H		44				
	20							
	30			45				Very dense at 44.0 feet; broken sampler, no recovery.
				46				
				47				Bottom of sample at 45.0 feet
				48				Bottom of boring at 43.5 feet
				49				09/14/90
				50				
				51				
				52				
				53				
				54				
				55				
				56				
				57				
				58				
				59				
				60				

Remarks:

GeoStrategies Inc.

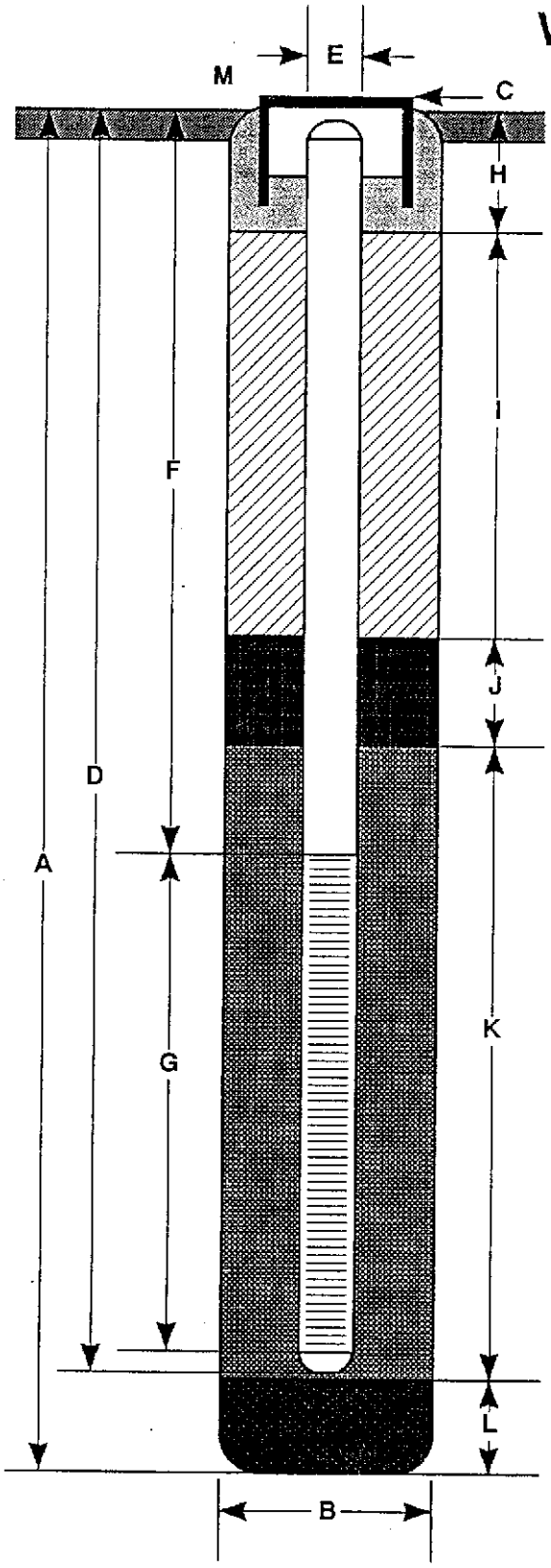
Log of Boring

BORING NO.

RMC-2

JOB NUMBER	REVIEWED BY RG/CEG	DATE	REVISED DATE	REVISED DATE
7004	RG/CEG 12/92	09/90		

WELL CONSTRUCTION DETAIL



A Total Depth of Boring 45 ft.

B Diameter of Boring 8 in.
Drilling Method Hollow-Stem Auger

C Top of Box Elevation 100.00 ft.
[ ] Referenced to Mean Sea Level
[X] Referenced to Project Datum

D Casing Length 42.5 ft.
Material Schedule 40 PVC

E Casing Diameter 2 in.

F Depth to Top Perforations 34.5 ft.

G Perforated Length 8 ft.
Perforated Interval from 34.5 to 42.5 ft.
Perforation Type Machine Slot
Perforation Size 0.02 in.

H Surface Seal from 0 to 1.5 ft.
Seal Material Concrete

I Backfill from 1.5 to 29 ft.
Backfill Material Concrete

J Seal from 29 to 31 ft.
Seal Material Bentonite

K Gravel Pack from 31 to 45 ft.
Pack Material #31-32/Sand - #32-45/Slough

L Bottom Seal none ft.
Seal Material

M Waterproof well cap and locking, steel above-ground completion.

Note: Depths measured from initial ground surface.

GeoStrategies Inc.

Well Construction Detail

WELL NO.
RMC-2

JOB NUMBER	REVIEWED BY RG/CEG	DATE	REVISED DATE	REVISED DATE
7004	CEG 12/92	09/90		

Field location of boring: (See Plate 3)	Project No.: 7004	Date: 09/14/90	Boring No: [redacted]
	Client: RMC Lonestar		
	Location: 6527 Calaveras Road		
	City: Sunol, California		Sheet 1 of 1
	Logged by: S.J.Carter	Driller: Bayland	
Drilling method: Hollow-Stem Auger	Casing installation data: (See Well Construction Detail)		
Hole diameter: 8-Inches	Top of Box Elevation: 71.12		Datum: Project Datum

Water Level	3.5'	3'	3.1'
Time	12:10	18:45	13:42
Date	09/14/90	09/14/90	09/25/90

PID (ppm)	Blows/ft. or Pressure (psi)	Type of Sample	Sample Number	Depth (ft.)	Description
				1	GRAVEL with CLAY and SAND (GW-GC) - dark grayish brown (10YR 4/2), very dense; 60% fine to coarse gravel; 30% fine to coarse sand; 10% clay; no chemical odor.
				2	
				3	
				4	Hard drilling at 3.5 feet
				5	
				6	
				7	
				8	Hard drilling at 7.0 feet.
	20	S&H		9	saturated at 3.5 feet, very dense; 70% fine to coarse gravel; 20% fine to coarse sand; 10% clay; no chemical odor.
	30		RMC3-		
0	31		10	10	
				11	
				12	
				13	
	20	S&H		14	
	21		RMC3-		
	19		15	15	
				16	SAND (SP) - saturated, dense; 80% medium sand; 20% fine to coarse gravel; trace clay/silt; trace peeat; no chemical odor.
				17	
				18	Increasing to very dense ate 18.0 feet; 70% fine to coarse sand; 10% silt/clay; no chemical odor.
	12			19	Bottom of sample at 19.5 feet.
	50				Bottom of boring at 18.5 feet.
				20	09/14/90

Remarks:

GeoStrategies Inc.

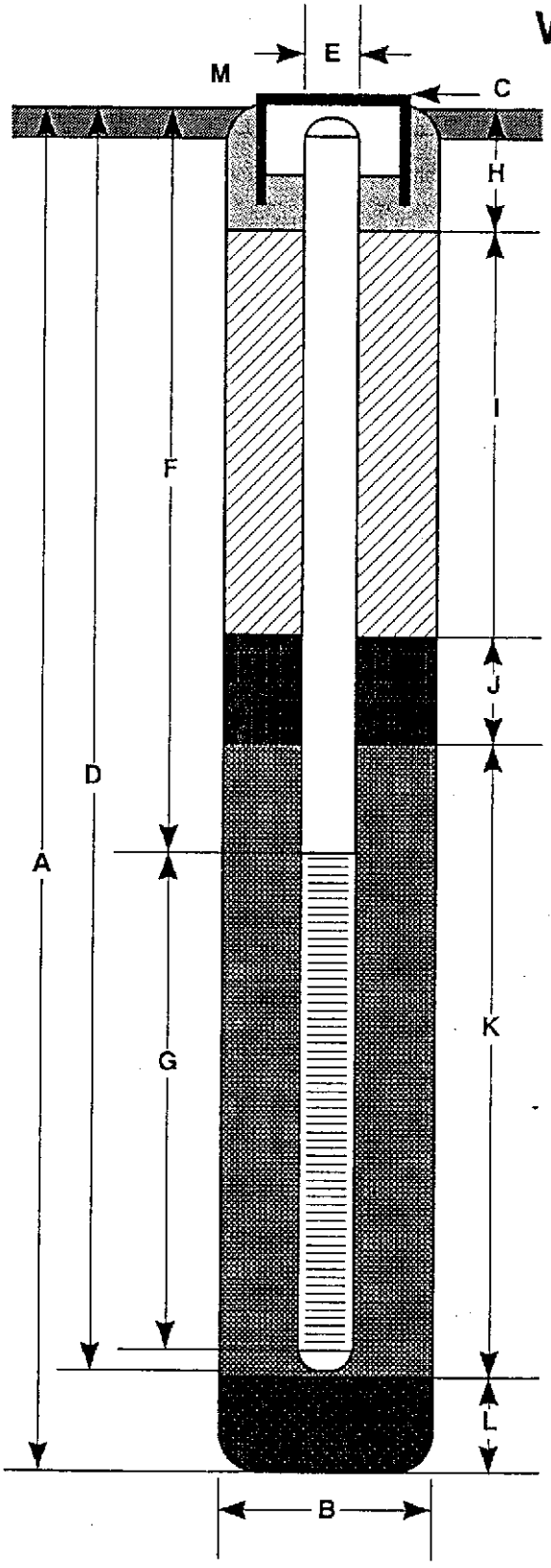
Log of Boring

BORING NO.

RMC-3

JOB NUMBER	REVIEWED BY RG/CEG	DATE	REVISED DATE	REVISED DATE
7004	RMP CEG 1262	09/90		

WELL CONSTRUCTION DETAIL



A Total Depth of Boring 19.5 ft.

B Diameter of Boring 8 in.
Drilling Method Hollow-Stem Auger

C Top of Box Elevation 71.12 ft.
[ ] Referenced to Mean Sea Level
[X] Referenced to Project Datum

D Casing Length 18.5 ft.
Material Schedule 40 PVC

E Casing Diameter 2 in.

F Depth to Top Perforations 3.5 ft.

G Perforated Length 15 ft.
Perforated Interval from 3.5 to 18.5 ft.
Perforation Type Machine Slot
Perforation Size 0.02 in.

H Surface Seal from 0 to 2 ft.
Seal Material Concrete

I Backfill from ____ to ____ ft.
Backfill Material none

J Seal from 2 to 3 ft.
Seal Material Bentonite

K Gravel Pack from 3 to 18.5 ft.
Pack Material Lonestar #2/12 Sand

L Bottom Seal none ft.
Seal Material ____

M Locking, waterproof well cap.

Note: Depths measured from initial ground surface.

GSI GeoStrategies Inc.

Well Construction Detail

WELL NO.
RMC-3

JOB NUMBER	REVIEWED BY RG/CEG	DATE	REVISED DATE	REVISED DATE
7004	CEMP 06/12/92	09/90		

Field location of boring: (See Plate 3)	Project No.: 7004	Date: 09/25/90	Boring No: [redacted]-4
	Client: RMC Lonestar		
	Location: 6527 Calaveras Road		
	City: Sunol, California		Sheet 1 of 3
	Logged by: S.J.Carter	Driller: Bayland	
Drilling method: Hollow-Stem Auger	Casing installation data: (See Well Construction Detail)		
Hole diameter: 8-Inches	Top of Box Elevation: 107.38		Datum: Project Datum

Water Level	30.5'	31.8'
Time	11:10	13:45
Date	09/25/90	09/25/90

PID (ppm)	Blows/ft. or Pressure (psi)	Type of Sample	Sample Number	Depth (ft.)	Sample	Well Detail	Soil Group Symbol (USCS)	Description
				1				
				2				
				3				
				4				
	12	S&H		5				GRAVEL with CLAY and SAND (GW-GC) - dark gray (5Y 4/1), very dense, moist; 60% fine to coarse gravel; 30% fine to coarse sand; 10% clay; no chemical odor.
0	24		RMC4-					
	27		6	6				
				7				
				8				
				9				
	5	S&H		10				SANDY CLAY (CL) - very dark gray (7.5YR N3/0), stiff, moist, low plasticity; 50% clay; 40% fine sand; 10% fine to coarse gravel; no chemical odor.
1	6		RMC4-					
	7		11	11				
				12				
				13				
				14				
2	5	S&H		15				No chemical odor at 14.5 feet.
	6		RMC4-					
	7		16	16				
				17				
				18				
				19				
	10	S&H		20				

Remarks:

GeoStrategies Inc.

Log of Boring

BORING NO. RCM-4

JOB NUMBER	REVIEWED BY RG/CEG	DATE	REVISED DATE	REVISED DATE
7004	CEG 12/02	09/90		

Field location of boring:	Project No.: 7004	Date: 09/25/90	Boring No:
(See Plate 3)	Client: RMC Lonestar		
	Location: 6527 Calaveras Road		
	City: Sunol, California		Sheet 2 of 3
	Logged by: S.J.Carter	Driller: Bayland	
Drilling method: Hollow-Stem Auger	Casing installation data:		
Hole diameter: 8-Inches	Top of Box Elevation:		Datum:

	Water Level			
	Time			
	Date			

PID (ppm)	Blows/ft. or Pressure (psi)	Type of Sample	Sample Number	Depth (ft.)	Sample	Well Detail	Soil Group Symbol (USCS)	Description
	12		RMC4-					CLAYEY SAND with GRAVEL (SC) - dark yellowish
	14		21	21				brown (10YR 3/6), medium dense, damp; 50% fine to
								coarse sand; 25% fine to coarse gravel; 20% clay; 5%
				22				silt; no chemical odor.
				23				
				24				
	22	S&H		25				COLOR CHANGE to yellowish brown (10YR 5/4) at 24.5
1	23		RMC4-					feet. Moist to very moist; some interstitial clays are
	24		26	26				reddish yellow (7.5YR 6/6); increasing to 25% fine gravel
								to cobble; no chemical odor.
				27				
				28				Hard drilling at 28.0 feet.
				29				Smooth drilling at 29.0 feet.
				30				Saturated at 30.5 feet.
								GRAVEL with SAND (GW) - brownish yellow (10YR 6/6),
	15	S&H		31				dense, saturated; 80% fine to coarse gravel; 15% fine to
	20		RMC4-					coarse sand; 5% clay; trace cobble; trace peat; no
	20		31	32				chemical odor.
				33				
				34				
	15	S&H		35				Very dense at 35.0 feet; no chemical odor.
	30							
	50/3"			36				
				37				
				38				
				39				
				40				

Remarks:

GeoStrategies Inc.

Log of Boring

BORING NO.

RMC-4

JOB NUMBER	REVIEWED BY RG/CEG	DATE	REVISED DATE	REVISED DATE
7004	CEG 12/6/2	09/90		

Field location of boring:

(See Plate 3)

Project No.:	7004	Date:	09/25/90
Client:	RMC Lonestar		
Location:	6527 Calaveras Road		
City:	Sunol, California		
Logged by:	S.J.Carter	Driller:	Bayland

Boring No: RMC-4

Sheet 3 of 3

Drilling method: Hollow-Stem Auger

Hole diameter: 8-Inches

Casing installation data:

Top of Box Elevation: Datum:

Water Level				
Time				
Date				

PID (ppm)	Blows/ft. or Pressure (psi)	Type of Sample	Sample Number	Depth (ft.)	Sample	Well Detail	Soil Group Symbol (USCS)	Description
	40	SPT		41				GRAVEL with CLAY and SAND (GW-GC) - brownish yellow (10YR 6/6), dense, saturated; 50% fine to coarse gravel; 40% fine to coarse sand; 10% clay; no chemical odor.
	50/3"							
				42				
				43				
				44				Bottom of sample at 40.75 feet.
								Bottom of boring at 40.75 feet.
				45				09/25/90
				46				
				47				
				48				
				49				
				50				
				51				
				52				
				53				
				54				
				55				
				56				
				57				
				58				
				59				
				60				

Remarks:

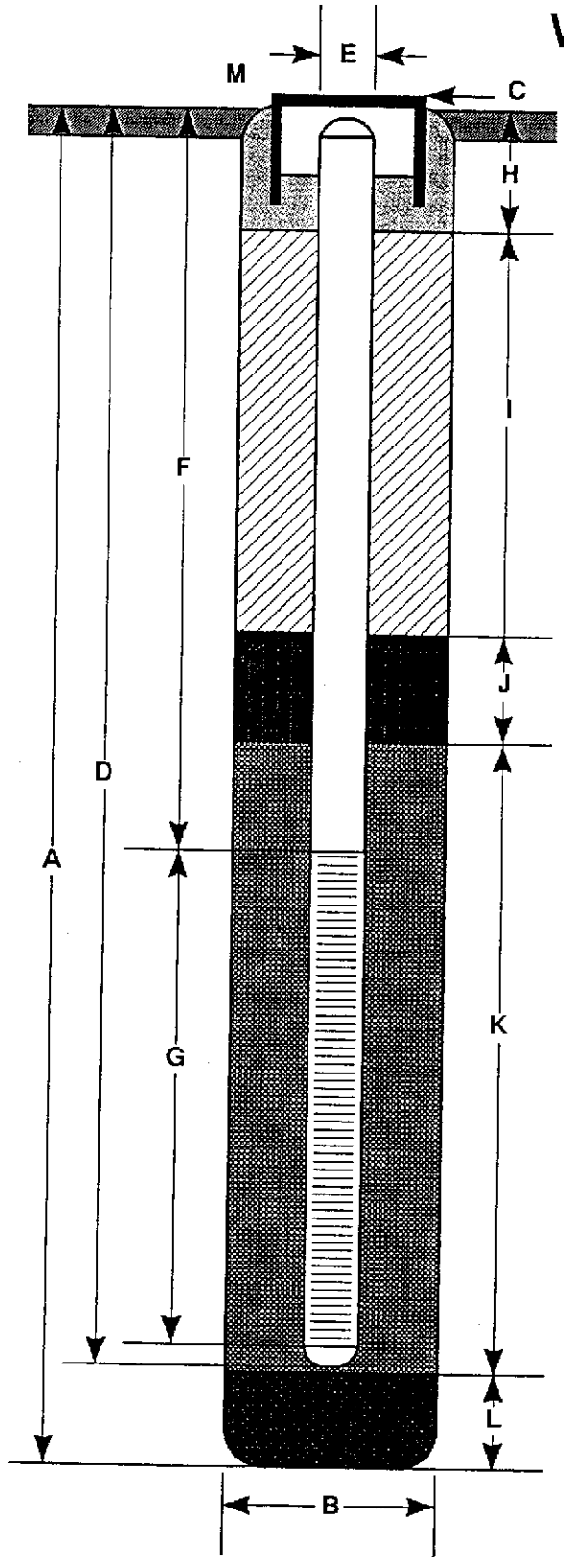
GeoStrategies Inc.

Log of Boring

BORING NO. RMC-4

JOB NUMBER	REVIEWED BY RG/CEG	DATE	REVISED DATE	REVISED DATE
7004	CEG 12 6 2	09/90		

WELL CONSTRUCTION DETAIL



A	Total Depth of Boring	40.75 ft.
B	Diameter of Boring	8 in.
	Drilling Method	Hollow-Stem Auger
C	Top of Box Elevation	101.30 ft.
	[ ] Referenced to Mean Sea Level	
	[X] Referenced to Project Datum	
D	Casing Length	40 ft.
	Material	Schedule 40 PVC
E	Casing Diameter	2 in.
F	Depth to Top Perforations	25 ft.
G	Perforated Length	15 ft.
	Perforated Interval from 25 to 40	ft.
	Perforation Type	Machine Slot
	Perforation Size	0.02 in.
H	Surface Seal from 0 to 1.5	ft.
	Seal Material	Concrete
I	Backfill from 1.5 to 21	ft.
	Backfill Material	Concrete
J	Seal from 21 to 23	ft.
	Seal Material	Bentonite
K	Gravel Pack from 23 to 40	ft.
	Pack Material	Lonestar #2/12 Sand
L	Bottom Seal	none ft.
	Seal Material	
M	Waterproof well cap ad locking, steel above-ground completion.	

Note: Depths measured from initial ground surface.

GeoStrategies Inc.

Well Construction Detail

WELL NO.

RMC-4

JOB NUMBER	REVIEWED BY RG/CEG	DATE	REVISED DATE	REVISED DATE
7004	RMP CEG 12/92	09/90		

APPENDIX C

THIN-FILM CHROMATOGRAPHY METHODOLOGY

Summary of Soil Sample Screening
by Thin-Layer Chromotography

1) Approximately 5 grams of sample are placed in a glass vial. Approximately 1 gram of silica gel is also added if the sample is moist or wet.

2) Five milliliters of hexane are added to the vial and the vial agitated for approximately 20 seconds to remove the diesel compounds from the soil and bring them into solution.

3) Five cubic centimeters of hexane/diesel solution are removed from the vial with a syringe and slowly blotted onto the test strips. The test strip consists of a silica gel wicking material on a glass plate. Standard solutions of known concentrations are blotted onto adjacent test strips on the same glass plate.

4) The glass plate with attached test strips is placed on end in approximately 1/2-inch of hexane, allowing the hexane to wick partially up the test strip.

5) The glass plate with attached test strips is removed from the hexane, allowed to dry and placed in an enclosed container with crystalline iodine to develop the test strips. Concentrations of compounds are determined by comparison to the standard solutions developed at the same time on the adjacent test strips.

APPENDIX D
GETTLER-RYAN INC. GROUND-WATER SAMPLING REPORT

gettler — ryan inc.

October 16, 1990

GROUNDWATER SAMPLING REPORT

Reference: RMC Lonestar Gravel Quarry
6527 Calaveras Road
Sunol, California

Sampling Date: October 5, 1990

This report presents the results of the groundwater sampling conducted by Gettler-Ryan Inc. on October 5, 1990 at the referenced location. The site is currently an active gravel quarry and aggregate processing facility located west of Calaveras Road in the Sunol Valley. RMC Lonestar maintains lube and diesel storage facilities on this property.

There are currently three groundwater monitoring wells and four holding ponds on location as indicated on the attached site map. Prior to sampling, all monitoring wells were inspected for total well depth, water levels, and presence of separate-phase product using an electronic interface probe. A clean acrylic bailer was used to confirm or deny the presence of separate-phase product. Groundwater depths ranged from 7.83 to 35.92 feet below grade. Separate-phase product was not observed in any monitoring wells.

The wells were then purged and sampled. Standard sampling procedure calls for a minimum of four case volumes to be purged from each well. Each well was purged while pH, conductivity, and temperature were monitored for stability. Details of the final well purging results are presented on the attached Table of Monitoring Data. In cases where a well de-watered or less than four case volumes were purged, groundwater samples were obtained after the physical parameters had stabilized. Under such circumstances the sample may not represent actual formation water, due to low flow conditions.

The four holding pond samples were secured with clean glass dippers, transferred to brown liter bottles, and prepared for proper storage and shipment to the analytical laboratory.

Monitoring well samples were collected using Teflon bailers, in properly cleaned and laboratory-prepared containers. The samples were labeled, stored on blue ice, and transported to the laboratory for analysis. Chain of custody records were established noting sample identification numbers, time, date, and custody signatures.

2150 west winton avenue • hayward, california 94545-1210 • (415) 783-7500

The samples were analyzed at International Technology Corporation - Santa Clara Valley Laboratory, located at 2055 Junction Avenue, San Jose, California. The laboratory is assigned a California DHS-HMTL Certification number of 137. The analytical results are presented as a Certified Analytical Report, a copy of which is attached to this report.

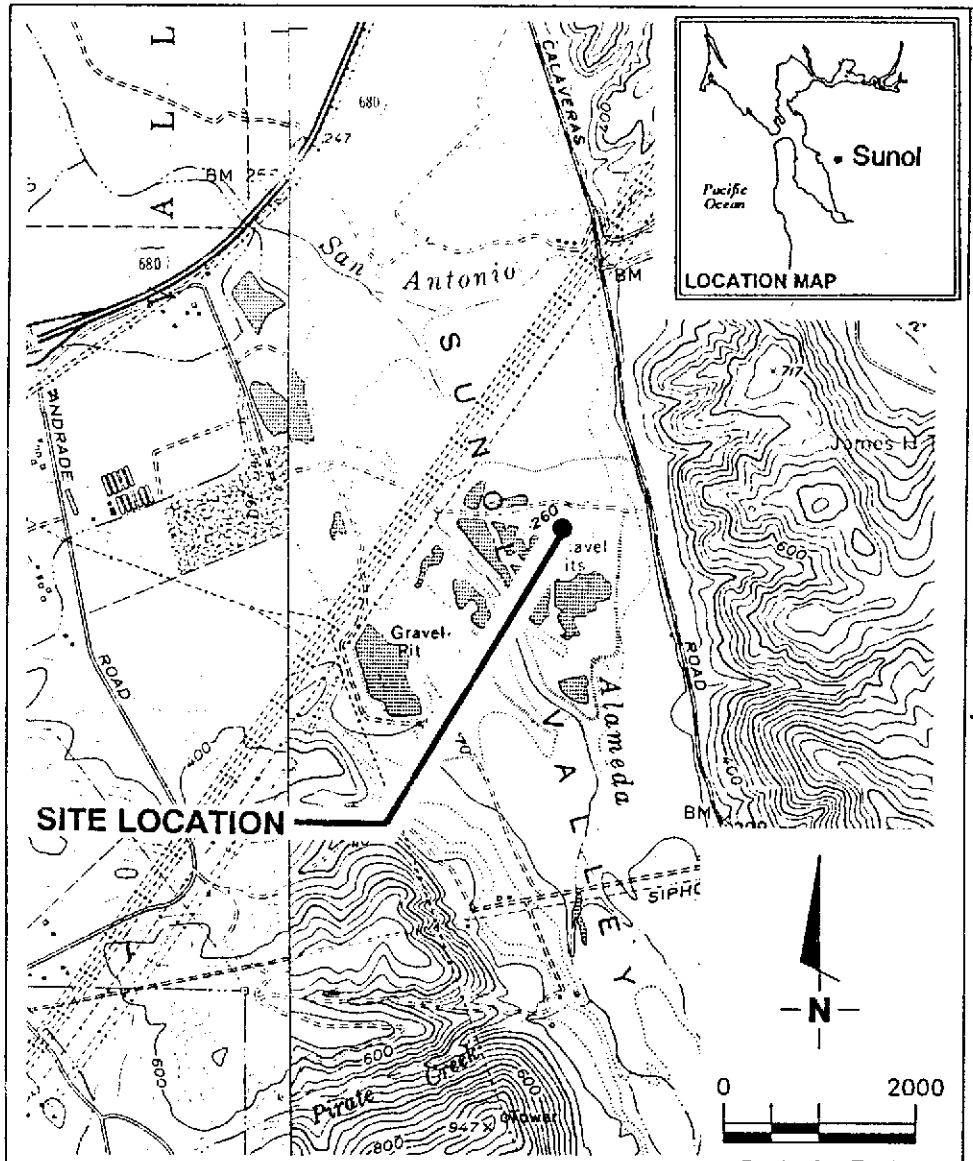
Tom Paulson
Sampling Manager

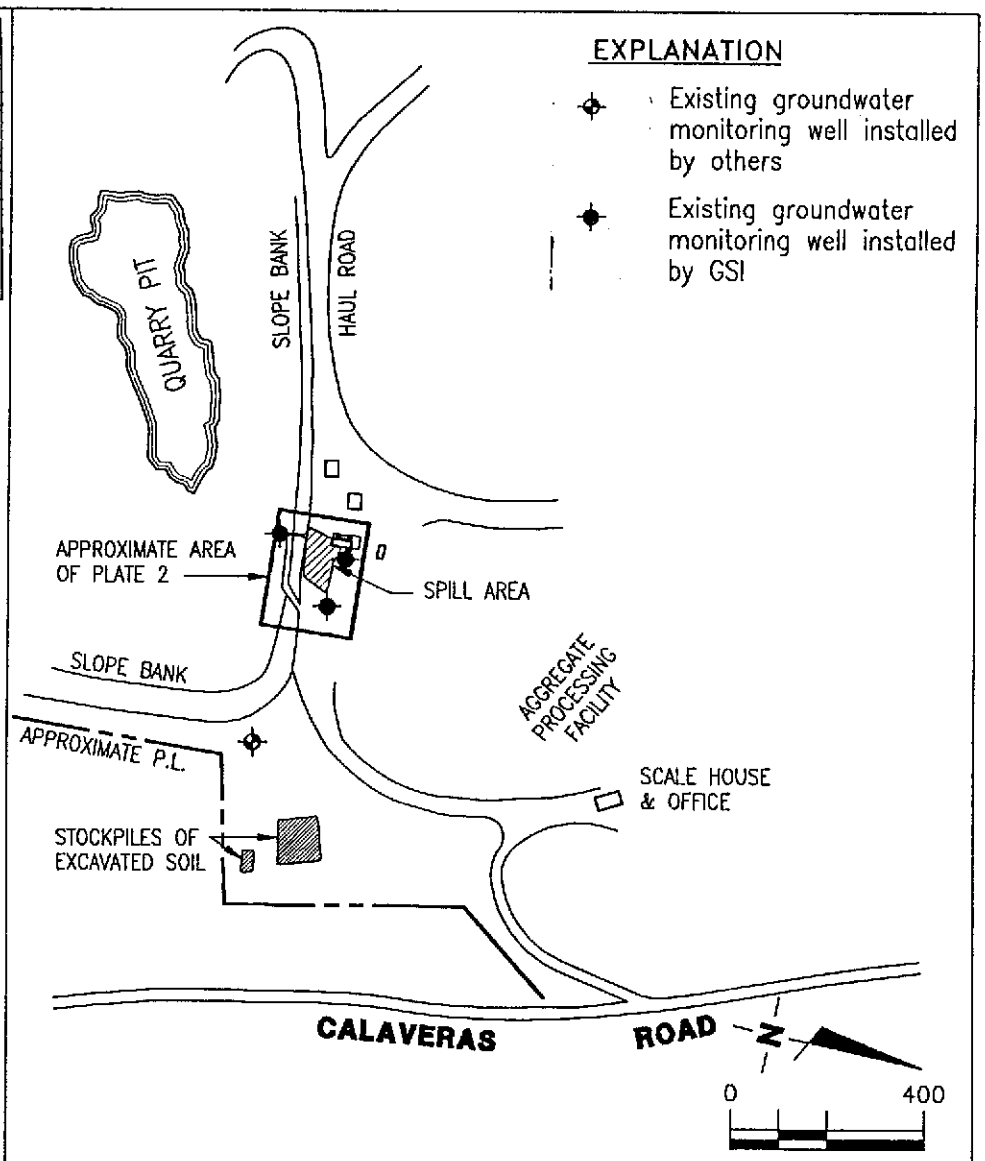
attachments

TABLE OF MONITORING DATA
GROUNDWATER WELL SAMPLING REPORT

WELL I.D.	RMC-2	RMC-3	RMC-4
Casing Diameter (inches)	2	2	2
Total Well Depth (feet)	43.5	20.5	43.0
Depth to Water (feet)	35.00	7.83	35.92
Free Product (feet)	none	none	none
Reason Not Sampled	----	----	----
Calculated 4 Case Vol.(gal.)	5.8	8.6	4.8
Did Well Dewater?	yes	no	no
Volume Evacuated	2.0	10.0	36.0
Purging Device	Bailer	Bailer	Bailer
Sampling Device	Bailer	Bailer	Bailer
Time	16:15	16:43	15:40
Temperature (F)*	68.2	65.6	63.6
pH*	7.63	8.10	7.63
Conductivity (umhos/cm)*	803	780	812

* Indicated Stabilized Value



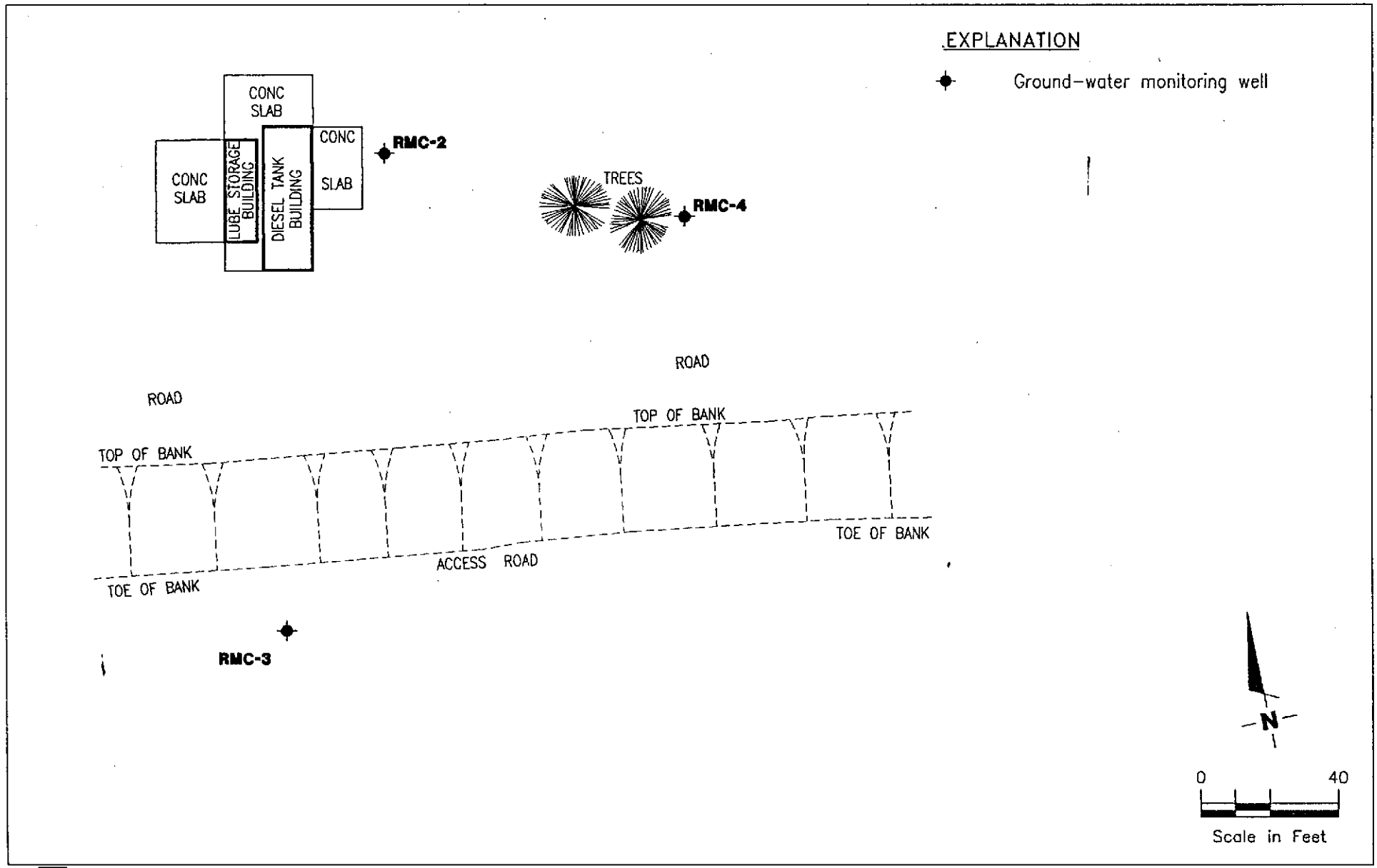


GeoStrategies Inc.

VICINITY AND SITE LOCATION MAPS
RMC Lonestar
6527 Calaveras Road
Sunol, California

PLATE
1

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE
7004	RG/CEG	9/90	



GeoStrategies Inc.

SITE PLAN
RMC Lonestar
6527 Calaveras Road
Sunol, California

PLATE
2

JOB NUMBER	REVIEWED BY RG/CEG	DATE	REVISED DATE
7004		10/90	

INTERNATIONAL TECHNOLOGY CORPORATION

ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

Date: 10/25/90

Gettler-Ryan
2150 West Winton
Hayward, CA 94545
Tom Paulson

Work Order: TO-10-088 P.O. Number: 3004

This is the Certificate of Analysis for the following samples:

Client Work ID: GR3004, RMC Lonestar, CORRECTED REPORT
Date Received: 10/05/90
Number of Samples: 7
Sample Type: aqueous

TABLE OF CONTENTS FOR ANALYTICAL RESULTS

Reviewed and Approved:

Suzanne Veaudry
Project Manager

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Gettler-Ryan, CORRECTED REPORT
Date: 10/25/90
Client Work ID: GR3004, RMC Lonestar

Work Order: TO-10-088

TEST NAME: **Petroleum Hydrocarbons**

SAMPLE ID: **RMC-2**
SAMPLE DATE: **10/05/90**
LAB SAMPLE ID: **T010088-01**
SAMPLE MATRIX: **aqueous**
RECEIPT CONDITION: **Cool pH < 2**

RESULTS in Micrograms per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
High Boiling Hydrocarbons	Mod.8015	10/10/90	10/10/90

PARAMETER	DETECTION LIMIT	DETECTED
High Boiling Hydrocarbons calculated as Diesel	60.	None

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Gettler-Ryan, CORRECTED REPORT
Date: 10/25/90
Client Work ID: GR3004, RMC Lonestar

Work Order: T0-10-088

TEST NAME: **Petroleum Hydrocarbons**

SAMPLE ID: **RMC-3**
SAMPLE DATE: **10/05/90**
LAB SAMPLE ID: **T010088-02**
SAMPLE MATRIX: **aqueous**
RECEIPT CONDITION: **Cool pH < 2**

RESULTS in Micrograms per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
High Boiling Hydrocarbons	Mod.8015	10/10/90	10/10/90

PARAMETER	DETECTION LIMIT	DETECTED
High Boiling Hydrocarbons calculated as Diesel	50.	**None**

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Gettler-Ryan, CORRECTED REPORT
Date: 10/25/90
Client Work ID: GR3004, RMC Lonestar

Work Order: T0-10-088

TEST NAME: **Petroleum Hydrocarbons**

SAMPLE ID: **RMC-4**
SAMPLE DATE: **10/05/90**
LAB SAMPLE ID: **T010088-03**
SAMPLE MATRIX: **aqueous**
RECEIPT CONDITION: **Cool pH < 2**

RESULTS in Micrograms per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
High Boiling Hydrocarbons	Mod.8015	10/10/90	10/10/90

PARAMETER	DETECTION LIMIT	DETECTED
High Boiling Hydrocarbons calculated as Diesel	50.	**None**

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Gettler-Ryan, CORRECTED REPORT
Date: 10/25/90
Client Work ID: GR3004, RMC Lonestar

Work Order: TO-10-088

TEST NAME: **Petroleum Hydrocarbons**

SAMPLE ID: **Pond-1**
SAMPLE DATE: **10/05/90**
LAB SAMPLE ID: **T010088-04**
SAMPLE MATRIX: **aqueous**
RECEIPT CONDITION: **Cool pH < 2**

RESULTS in Micrograms per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
High Boiling Hydrocarbons	Mod.8015	10/10/90	10/10/90

PARAMETER	DETECTION LIMIT	DETECTED
High Boiling Hydrocarbons calculated as Diesel	50.	None

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Gettler-Ryan, CORRECTED REPORT
Date: 10/25/90
Client Work ID: GR3004, RMC Lonestar

Work Order: TO-10-088

TEST NAME: **Petroleum Hydrocarbons**

SAMPLE ID: **Pond-2**
SAMPLE DATE: **10/05/90**
LAB SAMPLE ID: **T010088-05**
SAMPLE MATRIX: **aqueous**
RECEIPT CONDITION: **Cool pH < 2**

RESULTS in Micrograms per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
High Boiling Hydrocarbons	Mod.8015	10/10/90	10/10/90

PARAMETER	DETECTION LIMIT	DETECTED
High Boiling Hydrocarbons calculated as Diesel	50.	*710.

*Chromatographic pattern of compounds detected and calculated as diesel is similar to but does not match that of the diesel standard used for calibration.

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Gettler-Ryan, CORRECTED REPORT
Date: 10/25/90
Client Work ID: GR3004, RMC Lonestar

Work Order: T0-10-088

TEST NAME: **Petroleum Hydrocarbons**

SAMPLE ID: **Pond-3**
SAMPLE DATE: **10/05/90**
LAB SAMPLE ID: **T010088-06**
SAMPLE MATRIX: **aqueous**
RECEIPT CONDITION: **Cool pH < 2**

RESULTS in Micrograms per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
High Boiling Hydrocarbons	Mod.8015	10/10/90	10/10/90

PARAMETER	DETECTION LIMIT	DETECTED
High Boiling Hydrocarbons calculated as Diesel	50.	**None**

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Gettler-Ryan, CORRECTED REPORT
Date: 10/25/90
Client Work ID: GR3004, RMC Lonestar

Work Order: TO-10-088

TEST NAME: **Petroleum Hydrocarbons**

SAMPLE ID: **Pond-4**
SAMPLE DATE: **10/05/90**
LAB SAMPLE ID: **TO10088-07**
SAMPLE MATRIX: **aqueous**
RECEIPT CONDITION: **Cool pH < 2**

RESULTS in Micrograms per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
High Boiling Hydrocarbons	Mod.8015	10/10/90	10/10/90

PARAMETER	DETECTION LIMIT	DETECTED
High Boiling Hydrocarbons calculated as Diesel	50.	**None**

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Gettler-Ryan, CORRECTED REPORT
Date: 10/25/90
Client Work ID: GR3004, RMC Lonestar

Work Order: TO-10-088

TEST CODE **TPHN** TEST NAME **TPH High Boiling by 8015**

The method of analysis for high boiling hydrocarbons involves extracting the samples with solvent and examining the extracts by gas chromatography using a flame ionization detector.

Seiler - Ryan Inc. ENVIRONMENTAL DIVISION

Chain of Custody

COMPANY RMC Lonestar JOB NO. —

JOB LOCATION 6527 Calaveras Road

CITY Sunol, CA PHONE NO. —

AUTHORIZED Jeff Petersen DATE 10-5-90 P.O. NO. 3004

SAMPLE ID	NO. OF CONTAINERS	SAMPLE MATRIX	DATE/TIME SAMPLED	ANALYSIS REQUIRED	SAMPLE CONDITION LAB ID
RMC-2	1	Liquid	10-5-90 16:15	TPH Diesel	Cool @
RMC-3	2		16:43		
RMC-4	2		15:40		
Pond #1	2		16:20		
Pond #2	2		16:25		
Pond #3	1		16:33		
Pond #4	1		16:37		

RELINQUISHED BY: 17:32 10-5-1990 RECEIVED BY:

RELINQUISHED BY: RECEIVED BY:

RELINQUISHED BY: RECEIVED BY LAB: 10/5/90 1732

DESIGNATED LABORATORY: ZT/SCL DHS #: 137

REMARKS:

48hr to 72hr TAT
Priority on RMC 2, 3 4

DATE COMPLETED 10-5-90 FOREMAN

ORIGINAL

APPENDIX E

SOIL ANALYTICAL REPORTS

NATIONAL ENVIRONMENTAL TESTING, INC.

NET Pacific, Inc.
435 Tesconi Circle
Santa Rosa, CA 95401
Tel: (707) 526-7200
Fax: (707) 526-9623

GeoStrategies Inc.

Louis Schipper
RMC Lonestar
P.O. Box 5252
6601 Koll Center Pkwy
Pleasanton, CA 94566

Date: 09-14-90
NET Client Acct No: 674
NET Pacific Log No: 3705
Received: 09-07-90 2300

REVISED 09-25-90

Client Reference Information

S6527 Calaveras, Sunol, Job: 7004

Sample analysis in support of the project referenced above has been completed and results are presented on following pages. Please refer to the enclosed "Key to Abbreviations" for definition of terms. Should you have questions regarding procedures or results, please feel welcome to contact Client Services.

Approved by:

Jules Skamarack
Laboratory Manager

JS:rct
Enclosure(s)

Client No: 674
Client Name: RMC Lonestar
NET Log No: 3705

Date: 09-14-90

Page: 2

Ref: S6527 Calaveras, Sunol, Job: 7004

Parameter	Method	Reporting Limit	Descriptor, Lab No. and Results RMCx-1 09-07-90 0850 62253	RMCx-2 09-07-90 0859 62254	Units
PETROLEUM HYDROCARBONS			--	--	
EXTRACTABLE (SOIL)			--	--	
DILUTION FACTOR *			200	20	
DATE EXTRACTED			09-12-90	09-12-90	
DATE ANALYZED			09-12-90	09-12-90	
METHOD GC FID/3550			--	--	
as Diesel		1	3,000	790	mg/Kg

Client No: 674
Client Name: RMC Lonestar
NET Log No: 3705

Date: 09-14-90

Page: 3

Ref: S6527 Calaveras, Sunol, Job: 7004

Parameter	Method	Reporting Limit	Descriptor, Lab No. and Results RMCx-3 09-07-90 0917 62255	 RMCx-4 09-07-90 0900 62256	Units
PETROLEUM HYDROCARBONS			--	--	
EXTRACTABLE (SOIL)			--	--	
DILUTION FACTOR *			100	200	
DATE EXTRACTED			09-12-90	09-12-90	
DATE ANALYZED			09-12-90	09-12-90	
METHOD GC FID/3550			--	--	
as Diesel		1	4,500	8,100	mg/Kg

Client No: 674
Client Name: RMC Lonestar
NET Log No: 3705

Date: 09-14-90

Page: 4

Ref: S6527 Calaveras, Sunol, Job: 7004

Parameter	Method	Reporting Limit	Descriptor, Lab No. and Results RMCx-5 09-07-90 0932 62257	RMCx-6 09-07-90 0945 62258	Units
PETROLEUM HYDROCARBONS			--	--	
EXTRACTABLE (SOIL)			--	--	
DILUTION FACTOR *			100	1,000	
DATE EXTRACTED			09-12-90	09-12-90	
DATE ANALYZED			09-12-90	09-12-90	
METHOD GC FID/3550			--	--	
as Diesel		1	3,500	17,000	mg/Kg

KEY TO ABBREVIATIONS and METHOD REFERENCES

<	:	Less than; When appearing in results column indicates analyte not detected at the value following, which supercedes the listed reporting limit.
mean	:	Average; sum of measurements divided by number of measurements.
mg/Kg (ppm)	:	Concentration in units of milligrams of analyte per kilogram of sample, wet-weight basis (parts per million).
mg/L	:	Concentration in units of milligrams of analyte per liter of sample.
mL/L/hr	:	Milliliters per liter per hour.
MPN/100 mL	:	Most probable number of bacteria per one hundred milliliters of sample.
N/A	:	Not applicable.
NA	:	Not analyzed.
ND	:	Not detected; the analyte concentration is less than applicable listed reporting limit.
NTU	:	Nephelometric turbidity units.
RPD	:	Relative percent difference, 100 [Value 1 - Value 2]/mean value.
SNA	:	Standard not available.
ug/Kg (ppb)	:	Concentration in units of micrograms of analyte per kilogram of sample, wet-weight basis (parts per billion).
ug/L	:	Concentration in units of micrograms of analyte per liter of sample.
umhos/cm	:	Micromhos per centimeter.

Method References

Methods 601 through 625: see "Guidelines Establishing Test Procedures for the Analysis of Pollutants" U.S. EPA, 40 CFR, Part 136, rev. 1988.

Methods 1000 through 9999: see "Test Methods for Evaluating Solid Waste", U.S. EPA SW-846, 3rd edition, 1986.

* Reporting Limits are a function of the dilution factor for any given sample. To obtain the actual reporting limits for this sample, multiply the stated reporting limits by the dilution factor.

Gettler - Ryan Inc. — ENVIRONMENTAL DIVISION — **Chain of Custody**

COMPANY RMC Lonestar JOB NO. 7004

JOB LOCATION 6527 Calaveras

CITY Sunol PHONE NO.

AUTHORIZED Jeff Peterson DATE 9-7-90 P.O. NO.

SAMPLE ID	NO. OF CONTAINERS	SAMPLE MATRIX	DATE/TIME SAMPLED	ANALYSIS REQUIRED	SAMPLE CONDITION LAB ID
RMCX-1	1	Soil	9-7-90/8:30	TPH-Diesel	
RMCX-2	1	Soil	9-7-90/8:59	TPH-Diesel	
RMCX-3	1	Soil	9-7-90/9:17	TPH-Diesel	
RMCY-4	1	Soil	9-7-90/9:	TPH-Diesel	
RMCX-5	1	Soil	9-7-90/9:32	TPH-Diesel	
RMCY-6	1	Soil	9-7-90/9:45	TPH-Diesel	

RELINQUISHED BY: Stephen Carter 12:00 9-7-90

RECEIVED BY: Jeff Winkler 9/7/90 @ 12:50

RELINQUISHED BY:

RECEIVED BY:

RELINQUISHED BY:

RECEIVED BY LAB:

DESIGNATED LABORATORY: NET Pacific DHS #:

REMARKS:

DATE COMPLETED PERSON

NUMERICAL FILE

NET NATIONAL ENVIRONMENTAL TESTING, INC.

NET Pacific, Inc.
435 Tesconi Circle
Santa Rosa, CA 95401
Tel: (707) 526-7200
Fax: (707) 526-9623

Louis Schipper
RMC Lonestar
P.O. Box 5252
6601 Koll Center Pkwy
Pleasanton, CA 94566

Date: 09-26-90
NET Client Acct No: 674
NET Pacific Log No: 3888
Received: 09-19-90 0800

Client Reference Information

6527 Calaveras, Sunol, Job: 7004

Sample analysis in support of the project referenced above has been completed and results are presented on following pages. Please refer to the enclosed "Key to Abbreviations" for definition of terms. Should you have questions regarding procedures or results, please feel welcome to contact Client Services.

Approved by:

Jules Skamarack
Laboratory Manager

JS:rct
Enclosure(s)

Client No: 674
Client Name: RMC Lonestar
NET Log No: 3888

Date: 09-26-90

Page: 2

Ref: 6527 Calaveras, Sunol, Job: 7004

Parameter	Method	Reporting Limit	Descriptor, Lab No. and Results RMC2-15 09-14-90 63096	RMC2-30 09-14-90 63097	Units
PETROLEUM HYDROCARBONS			--	--	
EXTRACTABLE (SOIL)			--	--	
DILUTION FACTOR *			1	1	
DATE EXTRACTED			09-23-90	09-23-90	
DATE ANALYZED			09-24-90	09-24-90	
METHOD GC FID/3550			--	--	
as Diesel		1	ND	ND	mg/Kg

KEY TO ABBREVIATIONS and METHOD REFERENCES

<	:	Less than; When appearing in results column indicates analyte not detected at the value following, which supercedes the listed reporting limit.
mean	:	Average; sum of measurements divided by number of measurements.
mg/Kg (ppm)	:	Concentration in units of milligrams of analyte per kilogram of sample, wet-weight basis (parts per million).
mg/L	:	Concentration in units of milligrams of analyte per liter of sample.
mL/L/hr	:	Milliliters per liter per hour.
MPN/100 mL	:	Most probable number of bacteria per one hundred milliliters of sample.
N/A	:	Not applicable.
NA	:	Not analyzed.
ND	:	Not detected; the analyte concentration is less than applicable listed reporting limit.
NTU	:	Nephelometric turbidity units.
RPD	:	Relative percent difference, 100 [Value 1 - Value 2]/mean value.
SNA	:	Standard not available.
ug/Kg (ppb)	:	Concentration in units of micrograms of analyte per kilogram of sample, wet-weight basis (parts per billion).
ug/L	:	Concentration in units of micrograms of analyte per liter of sample.
umhos/cm	:	Micromhos per centimeter.

Method References

Methods 601 through 625: see "Guidelines Establishing Test Procedures for the Analysis of Pollutants" U.S. EPA, 40 CFR, Part 136, rev. 1988.

Methods 1000 through 9999: see "Test Methods for Evaluating Solid Waste", U.S. EPA SW-846, 3rd edition, 1986.

* Reporting Limits are a function of the dilution factor for any given sample. To obtain the actual reporting limits for this sample, multiply the stated reporting limits by the dilution factor.

(3888)

Getter - Ryan Inc. ENVIRONMENTAL DIVISION — **Chain of Custody**

COMPANY RMC LoneStar JOB NO. 7004

JOB LOCATION 6527 Calaveras

CITY Sunol PHONE NO.

AUTHORIZED Steve Carter DATE 9/17/90 P.O. NO.

SAMPLE ID	NO. OF CONTAINERS	SAMPLE MATRIX	DATE/TIME SAMPLED	ANALYSIS REQUIRED	SAMPLE CONDITION LAB ID
RMC2-15 ~~RMC-15~~	1	Soil	9-14-90	TPH (Diesel)	
RMC2-30 ~~RMC-30~~	1	Soil	9-14-90	TPH (Diesel)	

RELINQUISHED BY: Stephen Carter

RECEIVED BY: Jeff Winkler 9/18/90 @ 17:00

RELINQUISHED BY: Jeff Winkler 9/18/90

RECEIVED BY: Temple 9/19/90 @ 0800

RELINQUISHED BY:

RECEIVED BY LAB:

DESIGNATED LABORATORY: NET Pacific DHS #:

REMARKS:

Normal turnaround

custody seal 9/18/90 @ 19:00 custody seal intact

DATE COMPLETED FOREMAN

ORIGINAL

NATIONAL ENVIRONMENTAL TESTING, INC.

NET Pacific, Inc.
435 Tesconi Circle
Santa Rosa, CA 95401
Tel: (707) 526-7200
Fax: (707) 526-9623

Louis Schipper
RMC Lonestar
P.O. Box 5252
6601 Koll Center Pkwy
Pleasanton, CA 94566

Date: 10-08-90
NET Client Acct No: 674
NET Pacific Log No: 4047
Received: 09-27-90 0800

Client Reference Information

6527 Calaveras, Sunol

Sample analysis in support of the project referenced above has been completed and results are presented on following pages. Please refer to the enclosed "Key to Abbreviations" for definition of terms. Should you have questions regarding procedures or results, please feel welcome to contact Client Services.

Approved by:

Jules Skamarack
Laboratory Manager

JS:rct
Enclosure(s)

Client No: 674
Client Name: RMC Lonestar
NET Log No: 4047

Date: 10-08-90

Ref: 6527 Calaveras, Sunol

			Descriptor, Lab No. and Results		
			RMC4-16 09-25-90	RMC4-26 09-25-90	
Parameter	Method	Reporting Limit	63879	63880	Units
PETROLEUM HYDROCARBONS			--	--	
EXTRACTABLE (SOIL)			--	--	
DILUTION FACTOR *			1	1	
DATE EXTRACTED			10-03-90	10-03-90	
DATE ANALYZED			10-05-90	10-05-90	
METHOD GC FID/3550			--	--	
as Diesel		1	ND	ND	mg/Kg

KEY TO ABBREVIATIONS and METHOD REFERENCES

<	:	Less than; When appearing in results column indicates analyte not detected at the value following. This datum supercedes the listed Reporting Limit.
*	:	Reporting Limits are a function of the dilution factor for any given sample. To obtain the actual reporting limits for this sample, multiply the stated Reporting Limits by the dilution factor (but do not multiply reported values).
ICVS	:	Initial Calibration Verification Standard (External Standard).
mean	:	Average; sum of measurements divided by number of measurements.
mg/Kg (ppm)	:	Concentration in units of milligrams of analyte per kilogram of sample, wet-weight basis (parts per million).
mg/L	:	Concentration in units of milligrams of analyte per liter of sample.
mL/L/hr	:	Milliliters per liter per hour.
MPN/100 mL	:	Most probable number of bacteria per one hundred milliliters of sample.
N/A	:	Not applicable.
NA	:	Not analyzed.
ND	:	Not detected; the analyte concentration is less than applicable listed reporting limit.
NTU	:	Nephelometric turbidity units.
RPD	:	Relative percent difference, 100 [Value 1 - Value 2]/mean value.
SNA	:	Standard not available.
ug/Kg (ppb)	:	Concentration in units of micrograms of analyte per kilogram of sample, wet-weight basis (parts per billion).
ug/L	:	Concentration in units of micrograms of analyte per liter of sample.
umhos/cm	:	Micromhos per centimeter.

Method References

Methods 100 through 493: see "Methods for Chemical Analysis of Water & Wastes", U.S. EPA, 600/4-79-020, rev. 1983.

Methods 601 through 625: see "Guidelines Establishing Test Procedures for the Analysis of Pollutants" U.S. EPA, 40 CFR, Part 136, rev. 1988.

Methods 1000 through 9999: see "Test Methods for Evaluating Solid Waste", U.S. EPA SW-846, 3rd edition, 1986.

SM: see "Standard Methods for the Examination of Water & Wastewater, 16th Edition, APHA, 1985.

Gettler - Ryan Inc. ENVIRONMENTAL DIVISION

4047 **Chain of Custody**

COMPANY RMC Lonestar JOB NO. 7004

JOB LOCATION 6527 Calaveras

CITY Sunol PHONE NO.

AUTHORIZED DATE P.O. NO.

SAMPLE ID	NO. OF CONTAINERS	SAMPLE MATRIX	DATE/TIME SAMPLED	ANALYSIS REQUIRED	SAMPLE CONDITION LAB ID
RMC4-16	1	Soil	9/25/90	TPH-Diesel	
RMC4-26	1	Soil	9/25/90	TPH-Diesel	

RELINQUISHED BY: Stephen Slater

RECEIVED BY: Jeff Wickham 9/26/90 16:45

RELINQUISHED BY: Jeff Wickham 9/26

RECEIVED BY: K Temple 9/27/90 0800

RELINQUISHED BY:

RECEIVED BY LAB:

DESIGNATED LABORATORY: NET DHS #:

REMARKS: Normal turnaround

Please analyse for Diesel and Diesel only.

custody seal 9/26/90 @ 19:00 custody seal intact 9-9/27

DATE COMPLETED FOREMAN

ORIGINAL

NATIONAL
ENVIRONMENTAL
TESTING, INC.

NET Pacific, Inc.
435 Tesconi Circle
Santa Rosa, CA 95401
Tel: (707) 526-7200
Fax: (707) 526-9623

RMC Lonestar
P.O. Box 5252
6601 Koll Center Pkwy
Pleasanton, CA 94566

Date: 10-15-90
NET Client Acct No: 674
NET Pacific Log No: 4257
Received: 10-09-90 0800

Client Reference Information

Job: 7004

Sample analysis in support of the project referenced above has been completed and results are presented on following pages. Please refer to the enclosed "Key to Abbreviations" for definition of terms. Should you have questions regarding procedures or results, please feel welcome to contact Client Services.

Approved by:

Jules Skamarack
Laboratory Manager

JS:rct
Enclosure(s)

Client No: 674
Client Name: RMC Lonestar
NET Log No: 4257

Date: 10-15-90

Ref: Job: 7004

Parameter	Method	Reporting Limit	Descriptor, Lab No. and Results RMCX-7 10-05-90 1045 64788	 RMCX-8 10-05-90 0900 64789	Units
PETROLEUM HYDROCARBONS			--	--	
EXTRACTABLE (SOIL)			--	--	
DILUTION FACTOR *			1	1	
DATE EXTRACTED			10-10-90	10-10-90	
DATE ANALYZED			10-11-90	10-11-90	
METHOD GC FID/3550			--	--	
as Diesel		1	9.4	270	mg/Kg

Client No: 674
Client Name: RMC Lonestar
NET Log No: 4257

Date: 10-15-90

Ref: Job: 7004

Parameter	Method	Reporting Limit	Descriptor, Lab No. and Results RMCX-9 10-05-90 1052 64790	 RMCX-10 10-04-90 0931 64791	Units
PETROLEUM HYDROCARBONS			--	--	
EXTRACTABLE (SOIL)			--	--	
DILUTION FACTOR *			1	1	
DATE EXTRACTED			10-10-90	10-10-90	
DATE ANALYZED			10-11-90	10-11-90	
METHOD GC FID/3550			--	--	
as Diesel		1	54	ND	mg/Kg

Client No: 674
Client Name: RMC Lonestar
NET Log No: 4257

Date: 10-15-90

Ref: Job: 7004

Parameter	Method	Reporting Limit	Descriptor, Lab No. and Results RMCX-11 10-05-90 1103 64792	 RMCX-12 10-05-90 0912 64793	Units
PETROLEUM HYDROCARBONS			--	--	
EXTRACTABLE (SOIL)			--	--	
DILUTION FACTOR *			1	1	
DATE EXTRACTED			10-10-90	10-10-90	
DATE ANALYZED			10-11-90	10-11-90	
METHOD GC FID/3550			--	--	
as Diesel		1	53	4.1	mg/Kg

Client No: 674
Client Name: RMC Lonestar
NET Log No: 4257

Date: 10-15-90

Ref: Job: 7004

Parameter	Method	Reporting Limit	Descriptor, Lab No. and Results RMCX-14 10-05-90 1200 64794	 RMCX-15 10-05-90 1210 64795	Units
PETROLEUM HYDROCARBONS			--	--	
EXTRACTABLE (SOIL)			--	--	
DILUTION FACTOR *			1	1	
DATE EXTRACTED			10-10-90	10-10-90	
DATE ANALYZED			10-11-90	10-11-90	
METHOD GC FID/3550			--	--	
as Diesel		1	34	8.3	mg/Kg

Client No: 674
Client Name: RMC Lonestar
NET Log No: 4257

Date: 10-15-90

Ref: Job: 7004

Parameter	Method	Reporting Limit	Descriptor, Lab No. and Results RMCX-16 10-05-90 1535 64796	 RMCX-17 10-04-90 1022 64797	Units
PETROLEUM HYDROCARBONS			--	--	
EXTRACTABLE (SOIL)			--	--	
DILUTION FACTOR *			1	1	
DATE EXTRACTED			10-10-90	10-10-90	
DATE ANALYZED			10-11-90	10-11-90	
METHOD GC FID/3550			--	--	
as Diesel		1	20	24	mg/Kg

Client No: 674
Client Name: RMC Lonestar
NET Log No: 4257

Date: 10-15-90

Ref: Job: 7004

Parameter	Method	Reporting Limit	Descriptor, Lab No. and Results RMCX-18 10-05-90 1540 64798	 RMCX-20 10-05-90 1550 64799	Units
PETROLEUM HYDROCARBONS			--	--	
EXTRACTABLE (SOIL)			--	--	
DILUTION FACTOR *			1	1	
DATE EXTRACTED			10-10-90	10-10-90	
DATE ANALYZED			10-11-90	10-11-90	
METHOD GC FID/3550			--	--	
as Diesel		1	78	22	mg/Kg

Client No: 674
Client Name: RMC Lonestar
NET Log No: 4257

Date: 10-15-90

Page: 8

Ref: Job: 7004

Parameter	Method	Reporting Limit	Descriptor, Lab No. and Results RMCX-23 10-04-90 1040 64800
PETROLEUM HYDROCARBONS			--
EXTRACTABLE (SOIL)			--
DILUTION FACTOR *			5
DATE EXTRACTED			10-10-90
DATE ANALYZED			10-11-90
METHOD GC FID/3550			--
as Diesel		1	120

Client No: 674
Client Name: RMC Lonestar
NET Log No: 4257

Date: 10-15-90

Ref: Job: 7004

Parameter	Method	Reporting Limit	Descriptor, Lab No. and Results RMCX-13 10-04-90 0920 64801	Units
PETROLEUM HYDROCARBONS			--	
VOLATILE (SOIL)			--	
DILUTION FACTOR *			10	
DATE ANALYZED			10-11-90	
METHOD 8020			--	
Benzene		2.5	ND	ug/Kg
Ethylbenzene		2.5	33	ug/Kg
Toluene		2.5	31	ug/Kg
Xylenes, total		2.5	170	ug/Kg
PETROLEUM HYDROCARBONS			--	
EXTRACTABLE (SOIL)			--	
DILUTION FACTOR *			5	
DATE EXTRACTED			10-10-90	
DATE ANALYZED			10-11-90	
METHOD GC FID/3550			--	
as Diesel		1	64	mg/Kg

Client No: 674
Client Name: RMC Lonestar
NET Log No: 4257

Ref: Job: 7004

Date: 10-15-90

Parameter	Method	Reporting Limit	Descriptor, Lab No. and Results RMCX-19 10-05-90 1545 64802	 RMCX-24 10-05-90 1150 64803	Units
PETROLEUM HYDROCARBONS			--	--	
VOLATILE (SOIL)			--	--	
DILUTION FACTOR *			1	1	
DATE ANALYZED			10-15-90	10-14-90	
METHOD 8020			--	--	
Benzene		2.5	ND	ND	ug/Kg
Ethylbenzene		2.5	ND	ND	ug/Kg
Toluene		2.5	ND	ND	ug/Kg
Xylenes, total		2.5	ND	ND	ug/Kg
PETROLEUM HYDROCARBONS			--	--	
EXTRACTABLE (SOIL)			--	--	
DILUTION FACTOR *			50	1	
DATE EXTRACTED			10-10-90	10-10-90	
DATE ANALYZED			10-10-90	10-11-90	
METHOD GC FID/3550			--	--	
as Diesel		1	970	22	mg/Kg

KEY TO ABBREVIATIONS and METHOD REFERENCES

<	:	Less than; When appearing in results column indicates analyte not detected at the value following. This datum supercedes the listed Reporting Limit.
*	:	Reporting Limits are a function of the dilution factor for any given sample. To obtain the actual reporting limits for this sample, multiply the stated Reporting Limits by the dilution factor (but do not multiply reported values).
ICVS	:	Initial Calibration Verification Standard (External Standard).
mean	:	Average; sum of measurements divided by number of measurements.
mg/Kg (ppm)	:	Concentration in units of milligrams of analyte per kilogram of sample, wet-weight basis (parts per million).
mg/L	:	Concentration in units of milligrams of analyte per liter of sample.
mL/L/hr	:	Milliliters per liter per hour.
MPN/100 mL	:	Most probable number of bacteria per one hundred milliliters of sample.
N/A	:	Not applicable.
NA	:	Not analyzed.
ND	:	Not detected; the analyte concentration is less than applicable listed reporting limit.
NTU	:	Nephelometric turbidity units.
RPD	:	Relative percent difference, 100 [Value 1 - Value 2]/mean value.
SNA	:	Standard not available.
ug/Kg (ppb)	:	Concentration in units of micrograms of analyte per kilogram of sample, wet-weight basis (parts per billion).
ug/L	:	Concentration in units of micrograms of analyte per liter of sample.
umhos/cm	:	Micromhos per centimeter.

Method References

Methods 100 through 493: see "Methods for Chemical Analysis of Water & Wastes", U.S. EPA, 600/4-79-020, rev. 1983.

Methods 601 through 625: see "Guidelines Establishing Test Procedures for the Analysis of Pollutants" U.S. EPA, 40 CFR, Part 136, rev. 1988.

Methods 1000 through 9999: see "Test Methods for Evaluating Solid Waste", U.S. EPA SW-846, 3rd edition, 1986.

SM: see "Standard Methods for the Examination of Water & Wastewater, 16th Edition, APHA, 1985.

Geffler - Ryan Inc. ENVIRONMENTAL DIVISION

4257 **Chain of Custody**

COMPANY RMC Lonestar JOB NO. 7004

JOB LOCATION 6527 Calaveras Road

CITY Sunol PHONE NO.

AUTHORIZED DATE 10/4/90 P.O. NO.

SAMPLE ID	NO. OF CONTAINERS	SAMPLE MATRIX	DATE/TIME SAMPLED	ANALYSIS REQUIRED	SAMPLE CONDITION LAB ID
RMCX-7	1	Soil	10-5-90/10:45	TPH-Diesel	
RMCX-8	1	Soil	10-5-90/9:00	TPH-Diesel	
RMCX-9	1	Soil	10-5-90/10:52	TPH-Diesel	
RMCX-10	1	Soil	10-4-90/9:31	TPH-Diesel	
RMCX-11	1	Soil	10-5-90/11:03	TPH-Diesel	
RMCX-12	1	Soil	10-5-90/9:12	TPH-Diesel	
RMCX-13	1	Soil	10-4-90/9:20	TPH-Diesel, BTEX	
RMCX-14	1	Soil	10-5-90/12:00	TPH-Diesel	
RMCX-15	1	Soil	10-5-90/12:10	TPH-Diesel	
RMCX-16	1	Soil	10-5-90/15:35	TPH-Diesel	
RMCX-17	1	Soil	10-4-90/10:22	TPH-Diesel	
RMCX-18	1	Soil	10-5-90/15:40	TPH-Diesel	
RMCX-19	1	Soil	10-5-90/15:45	TPH-Diesel, BTEX	

RELINQUISHED BY: Stephen Carter 11:50 10-8-90

RECEIVED BY: Jamie Green

RELINQUISHED BY: Jamie Green

RECEIVED BY: K Temple 10/9/90 0800

RELINQUISHED BY:

RECEIVED BY LAB:

DESIGNATED LABORATORY: NET DHS #:

REMARKS: 5-Day turnaround time

DATE COMPLETED FOREMAN

* CUSTODY SEAL APPLIED 10/8/90 1:30pm. custody seal intact

ORIGINAL

Gettler - Ryan Inc. ENVIRONMENTAL DIVISION 4257 **Chain of Custody**

COMPANY RMC Lonestar JOB NO. 7004

JOB LOCATION 6527 Calaveras Road

CITY Sunol PHONE NO.

AUTHORIZED DATE 10-4-90 P.O. NO.

SAMPLE ID	NO. OF CONTAINERS	SAMPLE MATRIX	DATE/TIME SAMPLED	ANALYSIS REQUIRED	SAMPLE CONDITION LAB ID
RMCX-20	1	Soil	10-5-90/15:50	TPH-Diesel	
~~RMCX-21~~					
~~RMCX-22~~					
RMCX-23	1	Soil	10-4-90/10:40	TPH-Diesel	
RMCX-24	1	Soil	10-5-90/11:50	TPH-Diesel, BTEX	

RELINQUISHED BY: Stephanie Gutierrez 10-8-90 11:50 RECEIVED BY: Janice Green

RELINQUISHED BY: Janice Green 10/8/90 1:30pm RECEIVED BY: K Temple 10/9/90 0840

~~RELINQUISHED BY:~~ RECEIVED BY LAB:

DESIGNATED LABORATORY: NET DHS #:

REMARKS: 5-Day turnaround time

DATE COMPLETED FOREMAN

*CUSTODY SEAL APPLIED 10/8/90 1:30pm custody seal intact

NET NATIONAL ENVIRONMENTAL TESTING, INC.

NET Pacific, Inc.
435 Tesconi Circle
Santa Rosa, CA 95401
Tel: (707) 526-7200
Fax: (707) 526-9623

Louis Schipper
RMC Lonestar
P.O. Box 5252
6601 Koll Center Pkwy
Pleasanton, CA 94566

Date: 10-22-90
NET Client Acct. No: 674
NET Pacific Log No: 4365
Received: 10-12-90 2300

Client Reference Information

6527 Calaveras Road, Sunol, Job: 7004

Sample analysis in support of the project referenced above has been completed and results are presented on following pages. Please refer to the enclosed "Key to Abbreviations" for definition of terms. Should you have questions regarding procedures or results, please feel welcome to contact Client Services.

Approved by:

Jules Skamarack
Laboratory Manager

Enclosure(s)

SAMPLE DESCRIPTION: RMCX-25 10-11-90
LAB Job No: (-65218)

Parameter	Method	Reporting Limit	Results	Units
PETROLEUM HYDROCARBONS			--	
VOLATILE (SOIL)			--	
DILUTION FACTOR *			1	
DATE ANALYZED			10-19-90	
METHOD 8020			--	
Benzene		2.5	ND	ug/Kg
Ethylbenzene		2.5	ND	ug/Kg
Toluene		2.5	ND	ug/Kg
Xylenes, total		2.5	ND	ug/Kg
PETROLEUM HYDROCARBONS			--	
EXTRACTABLE (SOIL)			--	
DILUTION FACTOR *			1	
DATE EXTRACTED			10-16-90	
DATE ANALYZED			10-17-90	
METHOD GC FID/3550			--	
as Diesel		1	ND	mg/Kg

Ref: 6527 Calaveras Road, Sunol, Job: 7004

SAMPLE DESCRIPTION: RMCX-26 10-11-90
LAB Job No: (-65219)

Parameter	Method	Reporting Limit	Results	Units
PETROLEUM HYDROCARBONS			--	
VOLATILE (SOIL)			--	
DILUTION FACTOR *			1	
DATE ANALYZED			10-18-90	
METHOD 8020			--	
Benzene		2.5	ND	ug/Kg
Ethylbenzene		2.5	ND	ug/Kg
Toluene		2.5	ND	ug/Kg
Xylenes, total		2.5	ND	ug/Kg
PETROLEUM HYDROCARBONS			--	
EXTRACTABLE (SOIL)			--	
DILUTION FACTOR *			1	
DATE EXTRACTED			10-16-90	
DATE ANALYZED			10-17-90	
METHOD GC FID/3550			--	
as Diesel		1	ND	mg/Kg

SAMPLE DESCRIPTION: RMCX-29 10-10-90
LAB Job No: (-65220)

Parameter	Method	Reporting Limit	Results	Units
PETROLEUM HYDROCARBONS			--	
VOLATILE (SOIL)			--	
DILUTION FACTOR *			1	
DATE ANALYZED			10-17-90	
METHOD 8020			--	
Benzene		2.5	ND	ug/Kg
Ethylbenzene		2.5	ND	ug/Kg
Toluene		2.5	ND	ug/Kg
Xylenes, total		2.5	ND	ug/Kg
PETROLEUM HYDROCARBONS			--	
EXTRACTABLE (SOIL)			--	
DILUTION FACTOR *			1	
DATE EXTRACTED			10-16-90	
DATE ANALYZED			10-17-90	
METHOD GC FID/3550			--	
as Diesel		1	ND	mg/Kg

NET Pacific, Inc. Ref: 6527 Calaveras Road, Sunol, Job: 7004

SAMPLE DESCRIPTION: RMCX-27 10-10-90
LAB Job No: (-65221)

Parameter	Method	Reporting Limit	Results	Units
PETROLEUM HYDROCARBONS			--	
EXTRACTABLE (SOIL)			--	
DILUTION FACTOR *			1	
DATE EXTRACTED			10-16-90	
DATE ANALYZED			10-17-90	
METHOD GC FID/3550			--	
as Diesel		1	ND	mg/Kg

SAMPLE DESCRIPTION: RMCX-28 10-10-90
LAB Job No: (-65222)

Parameter	Method	Reporting Limit	Results	Units
PETROLEUM HYDROCARBONS			--	
EXTRACTABLE (SOIL)			--	
DILUTION FACTOR *			1	
DATE EXTRACTED			10-16-90	
DATE ANALYZED			10-17-90	
METHOD GC FID/3550			--	
as Diesel		1	14	mg/Kg

SAMPLE DESCRIPTION: RMCX-30 10-11-90
LAB Job No: (-65223)

Parameter	Method	Reporting Limit	Results	Units
PETROLEUM HYDROCARBONS			--	
EXTRACTABLE (SOIL)			--	
DILUTION FACTOR *			1	
DATE EXTRACTED			10-16-90	
DATE ANALYZED			10-17-90	
METHOD GC FID/3550			--	
as Diesel		1	ND	mg/Kg

NET Pacific, Inc.

Ref: 6527 Calaveras Road, Sunol, Job: 7004

SAMPLE DESCRIPTION: RMCX-31 10-11-90
LAB Job No: (-65224)

Parameter	Method	Reporting Limit	Results	Units
PETROLEUM HYDROCARBONS			--	
EXTRACTABLE (SOIL)			--	
DILUTION FACTOR *			5	
DATE EXTRACTED			10-16-90	
DATE ANALYZED			10-17-90	
METHOD GC FID/3550			--	
as Diesel		1	64	mg/Kg

SAMPLE DESCRIPTION: RMCX-32 10-11-90
LAB Job No: (-65225)

Parameter	Method	Reporting Limit	Results	Units
PETROLEUM HYDROCARBONS			--	
EXTRACTABLE (SOIL)			--	
DILUTION FACTOR *			1	
DATE EXTRACTED			10-16-90	
DATE ANALYZED			10-17-90	
METHOD GC FID/3550			--	
as Diesel		1	60	mg/Kg

NET Pacific, Inc.

KEY TO ABBREVIATIONS and METHOD REFERENCES

<	:	Less than; When appearing in results column indicates analyte not detected at the value following. This datum supercedes the listed Reporting Limit.
*	:	Reporting Limits are a function of the dilution factor for any given sample. To obtain the actual reporting limits for this sample, multiply the stated Reporting Limits by the dilution factor (but do not multiply reported values).
ICVS	:	Initial Calibration Verification Standard (External Standard).
mean	:	Average; sum of measurements divided by number of measurements.
mg/Kg (ppm)	:	Concentration in units of milligrams of analyte per kilogram of sample, wet-weight basis (parts per million).
mg/L	:	Concentration in units of milligrams of analyte per liter sample.
mL/L/hr	:	Milliliters per liter per hour.
MPN/100 mL	:	Most probable number of bacteria per one hundred milliliters of sample.
N/A	:	Not applicable.
NA	:	Not analyzed.
ND	:	Not detected; the analyte concentration is less than applicable listed reporting limit.
NTU	:	Nephelometric turbidity units.
RPD	:	Relative percent difference, 100 [Value 1 - Value 2]/mean value.
SNA	:	Standard not available.
ug/Kg (ppb)	:	Concentration in units of micrograms of analyte per kilogram of sample, wet-weight basis (parts per billion).
ug/L	:	Concentration in units of micrograms of analyte per liter of sample.
umhos/cm	:	Micromhos per centimeter.

Method References

Methods 100 through 493: see "Methods for Chemical Analysis of Water & Wastes", U.S. EPA, 600/4-79-020, rev. 1983.

Methods 601 through 625: see "Guidelines Establishing Test Procedures for the Analysis of Pollutants" U.S. EPA, 40 CFR, Part 136, rev. 1988.

Methods 1000 through 9999: see "Test Methods for Evaluating Solid Waste", U.S. EPA SW-846, 3rd edition, 1986.

SM: see "Standard Methods for the Examination of Water & Wastewater, 16th Edition, APHA, 1985.

Gettler - Ryan Inc. ENVIRONMENTAL DIVISION

4365 **Chain of Custody**

COMPANY RMC Lonestar JOB NO. 7004

JOB LOCATION 6527 Calaveras Road

CITY Sunol, CA PHONE NO.

AUTHORIZED Steve Carter DATE 10-12-90 P.O. NO.

SAMPLE ID	NO. OF CONTAINERS	SAMPLE MATRIX	DATE/TIME SAMPLED	ANALYSIS REQUIRED	SAMPLE CONDITION LAB ID
RMCX-25	1	Soil	10-11-90	TPH-Diesel, BTEX	
RMCX-26	1	Soil	10-11-90	TPH-Diesel, BTEX	
RMCX-27	1	Soil	10-10-90	TPH-Diesel	
RMCX-28	1	Soil	10-10-90	TPH-Diesel	
RMCX-29	1	Soil	10-10-90	TPH-Diese BTEX	
RMCX-30	1	Soil	10-11-90	TPH-Diesel	
RMCX-31	1	Soil	10-11-90	TPH-Diesel	
RMCX-32	1	Soil	10-11-90	TPH-Diesel	

RELINQUISHED BY: Stephen J. Carter

RECEIVED BY: Jeff Winkler 10/12/90 15:45

RELINQUISHED BY: Jeff Winkler 10/12/90

RECEIVED BY:

RELINQUISHED BY:

RECEIVED BY LAB: K Kemple 10/12/90 2300

DESIGNATED LABORATORY: NET DHS #: B

REMARKS: 5-Day turnaround: Need verbal results to Steve Carter @ 415-352-4800 by 12:00 noon on Friday, 10-19-90

custody seal 10/12/90 @ 19:00
custody sealintact @ 10/12

DATE COMPLETED FOREMAN

ORIGINAL