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PRINTED: 12/11/2002

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES AZMILS DATA

4 of 5

PRIMARY NAME: BUCKEYE WASH AREA URANIUM

ALTERNATE NAMES:

COCHISE COUNTY MILS NUMBER: 925

LOCATION: TOWNSHIP 12 S RANGE 29 E SECTION 10 QUARTER SE
LATITUDE: N 32DEG 24MIN 01SEC LONGITUDE: W 109DEG 22MIN 03SEC
TOPO MAP NAME: MARTIN WELL 7.5 - MIN

CURRENT STATUS: EXP PROSPECT

COMMODITY:
URANIUM

BIBLIOGRAPHY:
ADMMR BUCKEYE WASH AREA URANIUM FILE (1 OF 3)
CONTAINING GENERAL INFORMATION & REPORTS
ADMMR BUCKEYE WASH AREA URANIUM FILE (2 OF 3)
CONTAINING GEOPHYSICAL DATA
ADMMR BUCKEYE WASH AREA URANIUM FILE (3 OF 3)
CONTAINING DRILL LOG DATA

Baroid Petroleum Services

Baroid Petroleum Services Division/NL Industries, Inc.

DRILLING MUD REPORT

REPORT NO. M-R

DATE 5-23 1977 DEPTH -0-

API WELL NO.	STATE	COUNTY	WELL	S/T

OPERATOR: UNION CARBIDE	CONTRACTOR: LONGYEAR CO	RIG NO. 1142
ADDRESS: ALBUQUERQUE, N.M.	ADDRESS: PHOENIX, AZ	SPUD DATE
REPORT FOR MR. LASTRA	REPORT FOR MR.	SECTION, TOWNSHIP, RANGE

WELL NAME AND NO.	FIELD OR BLOCK NO.	COUNTY, PARISH OR OFFSHORE AREA	STATE OR PROVINCE
2-12-29-1	BUCKEYE WASH	COCHISE	ARIZ

OPERATION		CASING	MUD VOLUME (BBL)	CIRCULATION DATA	
PRESENT ACTIVITY: SETTING UP		6" SURFACE IN. at FT.	HOLE / PITS 10000	PUMP SIZE 5 X 8 IN.	ANNULAR VEL. (FT./MIN.) OPPOSITE DP
BIT SIZE (IN.) 5 5/8	NO.	INTERMEDIATE IN. at FT.	TOTAL CIRCULATING VOLUME 11,000 gal	PUMP MAKE / MODEL	OPPOSITE COLLAR
DRILL PIPE SIZE 2 7/8	TYPE	PRODUCTION OR LINER IN. at FT.	IN STORAGE	BBL/STROKE STROKE/MIN	CIRCULATING PRESSURE PSI
DRILL COLLAR SIZE 4 1/2	LENGTH 60±	MUD TYPE GEL CHEMICAL		BBL./MIN.	BOTTOMS UP (MIN.) / SYSTEM TOTAL (MIN.)

Sample from ☐ Flowline ☐ Pit
Flowline Tempeture °F

MUD PROPERTIES			
Time Sample Taken			
Depth (ft)			
Weight ☐ (ppg) ☐ (lb/cu ft)			
Mud Gradient (psi/ft)			
Funnel Viscosity (sec/qt) API at ____ °F			
Plastic Viscosity cp at ____ °F			
Yield Point (lb/100 sq ft)			
Gel Strength (lb/100 sq ft) 10 sec/10 min	/	/	/
pH ☑ Strip ☐ Meter	7½		
Filtrate API (ml/30 min)			
API HP-HT Filtrate (ml/30min) ____ °F			
Cake Thickness 32nd in API ☐ HP-HT ☐			
Alkalinity, Mud (P_m)	0.5		
Alkalinity, Filtrate (P_f/M_f)	0.35	/	/
Salt ☐ ppm ☐ gpg Chloride ☑ ppm ☐ gpg	350		
Calcium ☑ ppm ☐ Gyp (ppb)	40		
Sand Content (% by Vol)			
Solids Content (% by Vol)			
Oil Content (% by Vol)			
Water Content (% by Vol)			
Methylene Blue Capacity (me/ml mud)			

THANKS

EQUIPMENT	SIZE	HRS/TOUR				SIZE	HRS/TOUR			
Centrifuge						Desilter				
Degasser						Shaker				
Desander						Other				

DAILY COST	CUMULATIVE COST

MUD PROPERTIES SPECIFICATIONS

WEIGHT	VISCOSITY	FILTRATE
< 9.5	45±	<15 cc

BY AUTHORITY ☐ OPERATOR'S WRITTEN ☑ DRILLING CONTRACTOR ☑ OPERATOR'S REPRESENTATIVE ☐ OTHER

MATERIALS RECOMMENDED

MUD MIXTURE

15 # CAUSTIC SODA (pH 8.0)
14 SKS QUIK GEL - (VISC 40±)
1/2 SKS CELLEX HV
2 SKS DEXTRID

ABOVE MIXTURE FOR 11,000± gal

TOUR MAINTENANCE

5-10 # SODA ASH
QUIK GEL AS NEEDED FOR 40± VISCOSITY
10-15 # CELLEX HV
25 # DEXTRID
CC-16 AS NEEDED FOR CLAY

LOST CIRCULATION AS NEEDED FOR LOSS ZONES

THIS COPY TO OIL CO.

THE RECOMMENDATIONS MADE HEREON SHALL NOT BE CONSTRUED AS AUTHORIZING THE INFRINGEMENT OF ANY VALID PATENT, AND ARE MADE WITHOUT ASSUMPTION OF ANY LIABILITY BY N L INDUSTRIES, INC. OR ITS AGENTS, AND ARE STATEMENTS OF OPINION ONLY.

REPRESENTATIVE DUWAYNE HUSSEY	HOME ADDRESS ORACLE, AZ	TELEPHONE 896-9569	
MOBILE UNIT 624-6646 UNIT 0400	WAREHOUSE LOCATION WILLCOX - GLOBE	TELEPHONE 384-2201 JIM JOHNSON 378-7	

Baroid Petroleum Services

Baroid Petroleum Services Division/NL Industries, Inc.

DRILLING MUD REPORT

REPORT NO. N-R

DATE 5-25 1977 DEPTH 635

API WELL NO.	STATE	COUNTY	WELL	S/T

OPERATOR: UNION CARBIDE	CONTRACTOR: LONGYEAR DRLG	RIG NO. 1142
ADDRESS: ALBUQUERQUE, N.M.	ADDRESS: PHOENIX, AZ	SPUD DATE
REPORT FOR MR. LAS TRA	REPORT FOR MR. WILSON	SECTION, TOWNSHIP, RANGE
WELL NAME AND NO. 2-12-29-1	FIELD OR BLOCK NO. BUCKEYE WASH	COUNTY, PARISH OR OFFSHORE AREA: COCHISE
		STATE OR PROVINCE: ARIZ

OPERATION	CASING	MUD VOLUME (BBL)	CIRCULATION DATA
PRESENT ACTIVITY: DRLG	6" SURFACE IN. at 105' FT.	HOLE 780 PITS 5300	PUMP SIZE 5 X 6 IN. ANNULAR VEL. (FT./MIN.) OPPOSITE DP 150
BIT SIZE (IN.) 5 3/4 NO.	INTERMEDIATE IN. at FT.	TOTAL CIRCULATING VOLUME 6280 gal	PUMP MAKE MODEL OPPOSITE COLLAR
DRILL PIPE SIZE 2 7/8 TYPE	PRODUCTION OR LINER IN. at FT.	IN STORAGE	BBL/STROKE STROKE/MIN CIRCULATING PRESSURE PSI
DRILL COLLAR SIZE 4 1/2 LENGTH 60' ±	MUD TYPE GEL CHEMICAL	BBL./MIN.	BOTTOMS UP (MIN.) 4.2 SYSTEM TOTAL (MIN.)

Sample from ☑ Flowline ☐ Pit
Flowline Tempeture °F

MUD PROPERTIES			
Time Sample Taken	615		
Depth (ft)	635		
Weight ☑ (ppg) ☐ (lb/cu ft)	9.5+		
Mud Gradient (psi/ft)	—		
Funnel Viscosity (sec/qt) API at ____ °F	50		
Plastic Viscosity cp at ____ °F	7		
Yield Point (lb/100 sq ft)	26		
Gel Strength (lb/100 sq ft) 10 sec/10 min	35/56	/	/
pH ☑ Strip ☐ Meter	7.2		
Filtrate API (ml/30 min)	16.6		
API HP-HT Filtrate (ml/30min) ____ °F	—		
Cake Thickness 32nd in API ☑ HP-HT ☐	2		
Alkalinity, Mud (P_m)	0		
Alkalinity, Filtrate (P_f/M_f)	0.135	/	/
Salt ☐ ppm gpg Chloride ☐ ppm gpg	1750		
Calcium ☐ ppm ☐ Gyp (ppb)	480		
Sand Content (% by Vol)	22		
Solids Content (% by Vol)	—		
Oil Content (% by Vol)	—		
Water Content (% by Vol)	—		
Methylene Blue Capacity (me/ml mud)	—		

EQUIPMENT

	SIZE	HRS/TOUR				SIZE	HRS/TOUR			
Centrifuge					Desilter					
Degasser					Shaker					
Desander					Other					

DAILY COST	CUMULATIVE COST

MUD PROPERTIES SPECIFICATIONS

WEIGHT	VISCOSITY	FILTRATE
9.5	40-45	15 cc

BY AUTHORITY ☐ OPERATOR'S WRITTEN ☑ DRILLING CONTRACTOR ☐ OPERATOR'S REPRESENTATIVE ☐ OTHER

MATERIALS RECOMMENDED

BUILDING PIT VOLUME

ADD

50# SODA ASH
25# CELLEX HV.
25# DEXTRID

WHEN PIT CIRCULATION - BOTH ESTABLISHED

MIX
50# SODA ASH
25# CELLEX HV
50# DEXTRID
50# CC-16
MIX FAIRLY SLOW
QUIK GEL IF NEEDED FOR VISCOSITY

FOR MAINTENANCE EACH SHIFT

25# SODA ASH
QUIK GEL FOR 45± VISCOSITY
15# CELLEX HV.
35# DEXTRID
20# CC-16 (AS NEEDED FOR VISC. CONTROL)

THANKS

THIS COPY TO OIL CO.

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REPRESENTATIVE DUWAYNE HUSSEY	HOME ADDRESS ORACLE, AZ	TELEPHONE 896-9569
MOBILE UNIT 624-646 UNIT 0400	WAREHOUSE LOCATION WILLCOX, AZ	TELEPHONE 384-2201

Baroid Petroleum Services

Baroid Petroleum Services Division/NL Industries, Inc.

DRILLING MUD REPORT

REPORT NO. M-R

DATE 5-25 1971 DEPTH 540

API WELL NO.	STATE	COUNTY	WELL	S/T

OPERATOR: UNION CARBIDE	CONTRACTOR: LONGYEAR CO.	RIG NO. 1142
ADDRESS: ALBUQUERQUE, N.M.	ADDRESS: PHOENIX, ARIZ	SPUD DATE
REPORT FOR MR. LASTRA	REPORT FOR MR. WILSON	SECTION, TOWNSHIP, RANGE
WELL NAME AND NO. 2-12-29-1	FIELD OR BLOCK NO. DEKEYE WASH	COUNTY, PARISH OR OFFSHORE AREA: COCHISE
		STATE OR PROVINCE: ARIZ

OPERATION	CASING	MUD VOLUME (BBL)	CIRCULATION DATA
PRESENT ACTIVITY: DRLG	6" SURFACE IN. at 105' FT.	HOLE 715 PITS 5500	PUMP SIZE 5 X 6 IN.
BIT SIZE (IN.) 5 5/8 NO.	INTERMEDIATE IN. at FT.	TOTAL CIRCULATING VOLUME 6215 gal	PUMP MAKE / MODEL
DRILL PIPE SIZE 2 7/8 TYPE	PRODUCTION OR LINER IN. at FT.	IN STORAGE	BBL/STROKE STROKE/MIN
DRILL COLLAR SIZE 4 1/2 LENGTH 60±	MUD TYPE GEL CHEMICAL		BBL./MIN.

ANNULAR VEL. (FT./MIN.) OPPOSITE DP ____ OPPOSITE COLLAR ____

CIRCULATING PRESSURE PSI ____

BOTTOMS UP (MIN.) ____

SYSTEM TOTAL (MIN.) ____

Sample from ☐ Flowline ☐ Pit
Flowline Tempeture °F

MUD PROPERTIES			
Time Sample Taken	1 00		
Depth (ft)	540		
Weight ☑ (ppg) ☐ (lb/cu ft) (Air) 7c	8 3		
Mud Gradient (psi/ft)	/		
Funnel Viscosity (sec/qt) API at ____ °F	48		
Plastic Viscosity cp at ____ °F	10		
Yield Point (lb/100 sq ft)	7		
Gel Strength (lb/100 sq ft) 10 sec/10 min	11/16	/	/
pH ☑ Strip ☐ Meter	7 3		
Filtrate API (ml/30 min)	22.8		
API HP-HT Filtrate (ml/30min) ____ °F	/		
Cake Thickness 32nd in API ☑ HP-HT ☐	2		
Alkalinity, Mud (P_m)	0.1		
Alkalinity, Filtrate (P_f/M_f)	0.3	/	/
Salt ☐ ppm ☐ gpg Chloride ☑ ppm ☐ gpg	2000		
Calcium ☑ ppm ☐ Gyp (ppb)	520		
Sand Content (% by Vol)	1 1/2		
Solids Content (% by Vol)	—		
Oil Content (% by Vol)	—		
Water Content (% by Vol)	—		
Methylene Blue Capacity (me/ml mud)	—		

EQUIPMENT

	SIZE	HRS/TOUR				SIZE	HRS/TOUR			
Centrifuge						Desilter				
Degasser						Shaker				
Desander						Other				

DAILY COST ____ CUMULATIVE COST ____

MUD PROPERTIES SPECIFICATIONS

WEIGHT < 9 2 VISCOSITY 40-45 FILTRATE < 15 cc

BY AUTHORITY ☐ OPERATOR'S WRITTEN ☐ DRILLING CONTRACTOR ☐ OPERATOR'S REPRESENTATIVE ☐ OTHER

MATERIALS RECOMMENDED

ADD NOW

50# SODA ASH
15# CELLEX HV.
25# DEXTRID
25# CC-16

IF AIR CONTINUES TO FLUFF MUD ADD 5-10 GALS DIESEL OIL EACH SHIFT — USE 5 GAL CAN WITH 5 SMALL HOLES ACCROSS BOTTOM SO YOU GET A SPRAY AFFECT —

Fourly MAINT THANKS

25# SODA ASH
QUIK GEL FOR 45± VISCOSITY
10# CELLEX HV
25# DEXTRID
10# CC-16

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REPRESENTATIVE DUWAINE HUSSEY	HOME ADDRESS ORACLE	TELEPHONE 896-9369
MOBILE UNIT 624-6646 UNIT 04 00	WAREHOUSE LOCATION WILLCOX	TELEPHONE 384-2201 384-3787

Baroid Petroleum Services

Baroid Petroleum Services Division/NL Industries, Inc.

DRILLING MUD REPORT

REPORT NO. M-R

DATE 5-27 1977 DEPTH 1650

API WELL NO.	STATE	COUNTY	WELL	S/T

OPERATOR: UNION CARBIDE	CONTRACTOR: LONGYEAR DRLG	RIG NO. 1142
ADDRESS: ALBUQUERQUE, N.M.	ADDRESS: PHOENIX, ARIZ	SPUD DATE
REPORT FOR MR. LASTRA	REPORT FOR MR. WILSON	SECTION, TOWNSHIP, RANGE

WELL NAME AND NO.	FIELD OR BLOCK NO.	COUNTY, PARISH OR OFFSHORE AREA	STATE OR PROVINCE
2-12-29-1	BULLEYE WASH	COCHISE	ARIZ

OPERATION	CASING	MUD VOLUME (BBL)	CIRCULATION DATA
PRESENT ACTIVITY: TRIPPING	6" SURFACE IN. at 105' FT.	HOLE 1850 PITS 2000	PUMP SIZE 5 X 6 IN. ; ANNULAR VEL. (FT./MIN.) OPPOSITE DP
BIT SIZE (IN.) 5" ; NO.	INTERMEDIATE IN. at FT.	TOTAL CIRCULATING VOLUME 8850 gal	PUMP MAKE / MODEL ; OPPOSITE COLLAR
DRILL PIPE SIZE 2 7/8" ; TYPE	PRODUCTION OR LINER IN. at FT.	IN STORAGE	BBL/STROKE STROKE/MIN ; CIRCULATING PRESSURE PSI
DRILL COLLAR SIZE 4 1/2 ; LENGTH 60'	MUD TYPE GEL CHEMICAL		BBL./MIN. ; BOTTOMS UP (MIN.) ; SYSTEM TOTAL (MIN.)

Sample from ☐ Flowline ☑ Pit
Flowline Tempeture °F

MUD PROPERTIES			
Time Sample Taken	4:30		
Depth (ft)	1650		
Weight ☑ (ppg) ☐ (lb/cu ft)	8.9		
Mud Gradient (psi/ft)	/		
Funnel Viscosity (sec/qt) API at °F	36		
Plastic Viscosity cp at °F	—		
Yield Point (lb/100 sq ft)	—		
Gel Strength (lb/100 sq ft) 10 sec/10 min	/	/	/
pH ☑ Strip ☐ Meter	8.5		
Filtrate API (ml/30 min)	8.2		
API HP-HT Filtrate (ml/30min) °F	/		
Cake Thickness 32nd in API ☑ HP-HT ☐	2		
Alkalinity, Mud (P_m)	0.3		
Alkalinity, Filtrate (P_f/M_f)	0.8	/	/
Salt ☐ ppm ☐ gpg ; Chloride ☑ ppm ☐ gpg	850		
Calcium ☑ ppm ☐ Gyp (ppb)			
Sand Content (% by Vol)	3/4 of 1%		
Solids Content (% by Vol)	/		
Oil Content (% by Vol)	—		
Water Content (% by Vol)	—		
Methylene Blue Capacity (me/ml mud)	/		

EQUIPMENT	SIZE	HRS/TOUR				SIZE	HRS/TOUR		
Centrifuge					Desilter				
Degasser					Shaker				
Desander					Other				

DAILY COST	CUMULATIVE COST

MUD PROPERTIES SPECIFICATIONS

WEIGHT	VISCOSITY	FILTRATE
<9.5	40-45	<15 cc

BY AUTHORITY ☐ OPERATOR'S WRITTEN ☑ DRILLING CONTRACTOR ☐ OPERATOR'S REPRESENTATIVE ☐ OTHER

MATERIALS RECOMMENDED

LOSSING SOME CIRCULATION
CONTINUE ADDING CIRCULATION MATERIAL AS NEEDED TO CONTROL LOST CIRCULATION

BUR MAINTENANCE THANKS

20# SODA ASH
QUIK GEL FOR 45± VISCOSITY
15# CELLEX HV.
35# DEXTRID
15# CC-16
20# UNIKSEAL (MED)
20# HYSEAL

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REPRESENTATIVE: DWAINE HUSSEY	HOME ADDRESS: ORACLE (SAFFORD) PAPER LAKE	TELEPHONE: 896-9369	
MOBILE UNIT: 624-6646 UNIT 0400	WAREHOUSE LOCATION: WILLCOX	TELEPHONE: 384-2201	

Baroid Petroleum Services

Baroid Petroleum Services Division/NL Industries, Inc.

DRILLING MUD REPORT

REPORT NO. M-N

DATE 6-2 1977 DEPTH 103'

API WELL NO.	STATE	COUNTY	WELL	S/T

OPERATOR: UNION CARBIDE	CONTRACTOR: LONGYEAR DRLG	RIG NO. 1142
ADDRESS: ALBUQUERQUE, N.M.	ADDRESS: PHOENIX, AZ	SPUD DATE
REPORT FOR MR. LASTRA	REPORT FOR MR. WILSON	SECTION, TOWNSHIP, RANGE

WELL NAME AND NO.	FIELD OR BLOCK NO.	COUNTY, PARISH OR OFFSHORE AREA	STATE OR PROVINCE
2-12-29-2	BUCKEYE WASH	COCHISE	ARIZ

OPERATION	CASING	MUD VOLUME (BBL)	CIRCULATION DATA
PRESENT ACTIVITY: MAKE UP	6" SURFACE IN. at 103' FT.	HOLE 135 PITS 3000	PUMP SIZE 5 X 6 IN. ANNULAR VEL. (FT./MIN.)
BIT SIZE (IN.) 5 5/8 NO.	INTERMEDIATE IN. at FT.	TOTAL CIRCULATING VOLUME 3135 gal	PUMP MAKE / MODEL — OPPOSITE DP / OPPOSITE COLLAR
DRILL PIPE SIZE 2 7/8 TYPE	PRODUCTION OR LINER IN. at FT.	IN STORAGE SURPLUS TOTAL 9000 gal	BBL/STROKE STROKE/MIN — CIRCULATING PRESSURE PSI
DRILL COLLAR SIZE 4 1/2 LENGTH 35'	MUD TYPE GEL CHEMICAL		BBL./MIN. — BOTTOMS UP (MIN.) / SYSTEM TOTAL (MIN.)

Sample from ☐ Flowline ☐ Pit
Flowline Tempeture °F

MUD PROPERTIES			
Time Sample Taken		9:00 am	
Depth (ft)			
Weight ☐ (ppg) ☐ (lb/cu ft)			
Mud Gradient (psi/ft)			
Funnel Viscosity (sec/qt) API at ____ °F			
Plastic Viscosity cp at ____ °F			
Yield Point (lb/100 sq ft)			
Gel Strength (lb/100 sq ft) 10 sec/10 min	/	/	/
pH ☐ Strip ☐ Meter			
Filtrate API (ml/30 min)			
API HP-HT Filtrate (ml/30min) ____ °F			
Cake Thickness 32nd in API ☐ HP-HT ☐			
Alkalinity, Mud (P_m)			
Alkalinity, Filtrate (P_f/M_f)	/	/	/
Salt ☐ ppm gpg Chloride ☐ ppm gpg			
Calcium ☐ ppm ☐ Gyp (ppb)			
Sand Content (% by Vol)			
Solids Content (% by Vol)			
Oil Content (% by Vol)			
Water Content (% by Vol)			
Methylene Blue Capacity (me/ml mud)			

EQUIPMENT	SIZE	HRS/TOUR				SIZE	HRS/TOUR			
Centrifuge						Desilter				
Degasser						Shaker				
Desander						Other				

DAILY COST	CUMULATIVE COST

MUD PROPERTIES SPECIFICATIONS

WEIGHT	VISCOSITY	FILTRATE
<9#	40-45	<15 cc

BY AUTHORITY ☐ OPERATOR'S WRITTEN ☑ DRILLING CONTRACTOR ☐ OPERATOR'S REPRESENTATIVE ☐ OTHER

MATERIALS RECOMMENDED

MIX NOW

35# SODA ASH
4 SKS QUIK GEL (VISCOSITY of 40±)
25# CELLEX HV (1/2 SK)
75# DEXTRID (1½ SK)

MIX FOR EACH LOAD OF WATER

25# SODA ASH
2 SKS QUIK GEL
10# CELLEX HV
25# DEXTRID

TOURLY MAINT TRANDS

20# SODA ASH
QUIK GEL AS NEEDED FOR VISCOSITY
15# CELLEX HV
35# DEXTRID
IF NEEDED { 15# CC-16
20# KWIK SEAL & HY SEAL

THIS COPY TO OIL CO.

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REPRESENTATIVE	DUWAINE HUSSEY	HOME ADDRESS	ORACLE, AZ — TELEPHONE 896-9369
MOBILE UNIT	624-6646 UNIT 0400	WAREHOUSE LOCATION	WILLCOX, AZ — TELEPHONE 384-3[illegible]

DRILL HOLE SUMMARY

PROJECT Buckeye Wash DRILL HOLE NO. 2-12-29-1

Location Sec. 2 T 12S R 29E T.D. 1997

County Cochise Date completed 5/30/77

State Arizona Collar Elev. Surveyed ____ Estimated 3460

- ☐ Barren
- ☑ Trace Mineral < 0.02 eU_3O_8
- ☐ Mineralized 0.02-0.10 eU_3O_8
- ☐ Ore > 0.10 eU_3O_8

U_3O_8 Mineralization

Interval Top	Bottom	Thickness	eU_3O_8
133	1351	12	2 x Bkgd

U_3O_8 Assay

Assay No.	Interval	U_3O_8

Observations and Pertinent Lithologic Descriptions of OBSS Unit

Include Formation name, interval, thickness, summary of lithologic description i.e., rock type, color, alteration, heavy minerals; opinion of favorability.

0 - 740 Gn + Bn mudstone

740 - 1190 Gravels, + course sand - subangular rd bn

1190 - 1338 sand - bn bk, medium grained

1338 - 1347 sand - bn bk, medium to fine grained

1347 - 1364 sand - bn bk, medium grained - sub angular

1364 - 1480 Rhyolite

1480 - 1520 - sand - bn bk, coarse grained subangular

1520 - 1565 - sand - fine grained tuffaceous

1565 - 1910 - Rhyolitic fragments

1910 - Basaltic to Andesitic fragments

UC 149-2

UNION CARBIDE

INTERNAL CORRESPONDENCE

METAL DIVISION • 1820 SAN PEDRO N.E., SUITE 11, ALBUQUERQUE, NEW MEXICO 87110

To (Name) Record
Division Metals
Location

Date June 30, 1977

Originating Dept. John P. Lastra

Answering letter date John P. Lastra

Copy to W.A. Street
Al Sada

Subject Longyear Invoice Analysis
Buckeye Wash, Arizona

Buckeye Wash, Arizona

Hole No.: 2-12-29-1

Driller: Longyear Company

Listed below are those items and/or charges in question with respect to the drilling of Hole 2-12-29-1 in Cochise County, Arizona.

1) 10 hours charged during an 8 hour shift. Charges during this period are at a rig rate per hour. Therefore, only 8 hours are allowable during this shift.

2) A total of 10 hours were charged at a rig rate of $55/Hr. During this period the rig was down to allow the setting (drying) of cement. Therefore, a rate of $45/Hr. should be charged.

3) Hourly rate charges came into effect immediately upon the loss of circulation. No 2 hour allowance was made as stipulated in the UCC contract.

4) During this shift no mention was made of lost circulation problems. In addition, the water truck was out of gas for a period of at least four hours. Therefore, circulation problems during this period rest with Longyear.

5) During the night shift one foot was drilled in the 8 hour period. The trip cable was inoperable and the crew was out of mud during the shift. Therefore, any charges during this period are the responsibility of Longyear Company.

6) As can be seen by the date of purchase of the drilling water in question, Longyear Company was not yet under contract to Union Carbide Corporation. Drilling began on hole 2-12-29-1 on May 23, 1977.

Each of the above items has been circled and correspondingly numbered on the enclosed invoice and daily drill reports.

INVOICE
1160

Longyear

LONGYEAR COMPANY
General Offices: 925 Delaware Street S. E.
Minneapolis, Minnesota 55414, USA
Box 1368, Minneapolis, Minnesota 55440, USA
Telephone (612) 331-1331

13 June 1977
Union Carbide Corp.
PO Box 1029
Grand Junction, CO 81501

TERMS: PAYMENT DUE ON OR BEFORE

3 July 1977

Exploratory drilling carried out during May 1977 in vicinity of Bowie, AZ as per our agreement dated May 20, 1977
We hereby certify that the work covered by this invoice was performed in compliance with all requirements of the Fair Labor Standards Act of 1938, as amended.

Footage drilled or reamed	(see attached)	15,275.00	$15,275.00
Hourly rate charge	" " Inv. # 13,345	2,835.00	2,835.00
Supplies used	" "	3,413.56	3,413.56
AZ state sales tax 5% of 3,413.56		170.68	170.68
Handling charge for supplies 10% of 2,597.36		259.74	259.74
Water truck rental 1 @ 500.00/mo. - 8 days @ 16.67		133.36	133.36
Water truck rental 1 @ 800.00/mo. - 8 days @ 26.67		213.36	213.36
Water truck miles 644 miles @ .30¢ per mile		193.20	193.20
Water truck driver hous 62 hours @ 9.25		573.50	573.50
Mobilization 1 rotary rig		640.00	640.00
Water for drilling	" " Inv. # 6	—	3.75
Revised Total A.P. Lastra OK for Payment		23,167.40	$23,711.15

DUPLICATE

LONGYEAR COMPANY

"FOOTAGE DRILLED OR REAMED"

Month May, 1977 Contract Bowie R

Hole No.	Bit Size	DRILLING Non-Core	Over-burden	Diamond	Reaming	FOOTAGE SUMMARY From	To	Footage	Rate Per Foot	Amount
2-12-29-1	5 5/8	X				0	106	106	6.95	736.70
✓	7 7/8				X	0	106	106	(hourly Chg)	
✓	5 5/8	X				106	500	394	6.95	2738.30
✓	5 5/8-5 1/8	X				500	1000	500	7.25	3625.00
✓	5 1/8	X				1000	1500	500	7.75	3875.00
✓	✓	X				1500	2000	500	8.60	4300.00

HOURLY RATE CHARGE
LONGYEAR COMPANY

MONTH May, 1972 CONTRACT Bowie 'R'

Hole No.	Description	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Price	Amount
2-12-29-1	Reaming																							4									4	60.00	240.00
	Casing																								6								6	55.00	330.00
	Cementing																								14								14	55.00	770.00
	Lost Circulation																										3	6	8	2			19	55.00	1045.00
	Survey																														10		10	45.00	450.00
2-12-29-1	Revised							W. Lastra																											
	Reaming																							4									4	60.00	~~240.00~~
	Casing																								6								6	55.00	~~330.00~~
	Cementing																								2								2	55.00	~~110.00~~
	Standby																								10								10	45.00	~~450.00~~
	Lost Circulation																										1	4	6	2			13	55.00	715.00
	Survey																														10		10	45.00	450.00
																								Revised Total											2295.00
	Total																																		2835.00

MONTH May, 1922

SUPPLIES USED
LONGYEAR COMPANY

CONTRACT Bowie R'

Hole No.	Description	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Price	Amount
2-12-29-1	Quikgel																							4	1		16	15	20	15	3		74	4.50	333.00
	CMC																							1									1	119.61	119.61
	Dextrid																							1		2	1	3	2				9	49.94	449.[illegible]
	Cement																								10								10	4.10	41.00
	Cellex																									2	1	3	2	1	1		10	120.23	1202.30
	Soda Ash	(100#)																								2	2	2					6	16.69	100.14
	CC-16																									2	2	2					6	19.07	114.42
	Kwikseal																											3	4	3			10	18.65	186.50
	Hy-Seal																												2				2	12.81	25.62
																																			2572.05
																			1% Surcharge on 2531.05																25.31
																																			2597.36
																																	106'	7.70	816.20
	Casing - 7"																																		
Total																																			3413.56

LONGYEAR COMPANY
MINNEAPOLIS, MINNESOTA

EXPENSE ACCOUNT OF Bob Health FOR May 19 77
ADDRESS 1921 N. 6th St.
Mesa, Arizona
331- -3136

DATE	DETAIL Antelope Peak		AMOUNT	
May	Pickup Rental 15 days	703	$ 50	0
	Subsist. 9 days @ $5.00 per day	777	45	0
May 6	Ice	713	6	0
5/14/77	~~Tire Repair (flat)~~	744	~~5~~	~~0~~
	~~Water for drilling~~	712	~~3~~	~~75~~
	~~331- 3130 Casa Grande Contract~~			
3-21-77	Battery Charged	744	2	5
	" "	744	1	5
3-21-77	Starting fluid	742	1	31
	332-0- 3007 Bowie Contract			
	Meals from Phoenix to Bowie	739	9	57
	331-0 777 -3136 Antelope Peak Contract		124	63
	B. H. Health - Subsis. for 8 days at $5.00 per day		40	00
	K. Fenwick " " 8 " " " " "		40	00
	J. Henderson " " 5 " " " "		25	00
	D. Shoulders " " 5 " " " "		25	00
	A. Wilson " " 2 " " " "		10	00
	R. Finkle " " 1 " " " "		5	00
	Bowie R			

RECEIVED
JUN 3 1977
PHOENIX

FORM 304

MILEAGE — BEGINNING
END
TOTAL

FUNDS ON HAND
FUNDS ADVANCED
TOTAL
EXPENSE
BALANCE DUE

LONGYEAR COMPANY
Contracting Division
General Office
Minneapolis, Minnesota 55414

"DAILY DRILL REPORT"

Contract: Lewis 'R' Date: 5 (MONTH) 23 (DAY) 1977 Drill GD15W (TYPE) 1 (DRILL NO.) 2201 (TRUCK NO.)

Location: Lewis Ag Foreman's Signature: Steve Wilson

Shift	Hole No.	Angle	Material Drilled	Bit Size & Type	Footage Summary: Drilling From	Drilling To	Reaming From	Reaming To	Feet: Drilled or Reamed	Feet: Core Recovered	Total Casing in Hole: Size	Total Casing in Hole: Footage
Day A	2-12-29-1			53/8	0	30			30			
Aft B				53/8	30	52			22			
Nite C				53/8	52	110			58			
				77/8			0	106	106			

Hourly Distribution	Day	Aft.	Nite
Core Drilling			
Handling Rod (change bit)			
Overburden - rock bit			
Collaring Hole - Dia. bit			
Rotary Drilling	5	3	3
Handling Rod (bit)			
Rock Bit - Overburden			
Reaming (0 to 106)			(4)
Casing — Placing			
— Pulling			
Delays - Client Acct.			
Cementing - Handling Rods			
- Prep Hole & Grout			
- Setting			
- Drilling			
Moving - Hole to Hole			
Rigging Up - Rigging Down	2		
Mix Mud		2	1
Condition Hole, Lost Circulation			
Surveying, Inclination Test			
Mobilization/Demobilization			
Other (Explain)			
Power Helper	4	2	
Total Hours	10	8	8
Driller's Initials			

Supplies Consumed

Description	Size	Product Name	Day	Aft.	Nite
			Number of Units		
Portland					
Lumnite					
Calseal					
Mud	50#		4		
Mud	100#				
Other (Describe)					
Anco			1		
Portland			1		

OTHER

Water hauling 68 miles 2 loads
Core boxes: size/ no.
Length of waterline:
Lost tools: Description

Lost bits: Size Serial no.
Depth: ft. Hole #
Casing lost or left in hole: Size ft.
for Client Hole #
Longco Hole #
Bit changes: (Include first bit in hole) Size 4 5 5/8 Serial # Depth 0

Shift	DRILLERS	Hrs.	HELPERS	Hrs.	TRUCK DRIVERS	Hrs.
A	[illegible]	10	[illegible]	9		
B	[illegible]	7	[illegible]	7		
C	[illegible]	9	[illegible]	9		

Remarks: [illegible]

NOTE: If item is chargeable to client, place circle around time entry. Please follow instructions on reverse side.

CLIENT

LONGYEAR COMPANY
Contracting Division
General Office
Minneapolis, Minnesota 55414

"DAILY DRILL REPORT"

Contract: Power P Date: 5 (MONTH) 24 (DAY) 19 77 Drill: GD 25W (TYPE) / 12 (DRILL NO.) / 1 (TRUCK NO.)

Location: Power Ag C Foreman's Signature: Stan Wilson

Shift	Hole No.	Angle	Material Drilled	Bit Size & Type	Footage Summary: Drilling From	Drilling To	Reaming From	Reaming To	Feet: Drilled or Reamed	Feet: Core Recovered	Total Casing in Hole: Size	Total Casing in Hole: Footage
Day A	2-12-29-1			5 5/8	106							
Aft B												
Nite C				5 5/8	106	355			241			

Hourly Distribution	Day	Aft.	Nite
Core Drilling			
Handling Rod (change bit)			
Overburden - rock bit			
Collaring Hole - Dia. bit			
Rotary Drilling			6
Handling Rod (bit)			
Rock Bit - Overburden			
Reaming (to)			
Casing — Placing	(6)		
— Pulling		(1)	
Delays - Client Acct.	7 1/2		
Cementing - Handling Rods	(1)		
- Prep Hole & Grout			
- Setting	(3)	(8)	(2)
- Drilling			
Moving - Hole to Hole			
Rigging Up - Rigging Down		(2)	
Mix Mud			
Condition Hole, Lost Circulation			
Surveying, Inclination Test			
Mobilization/Demobilization		(2)	
Other (Explain)			
Total Hours	10	7	8
Driller's Initials			

Supplies Consumed

Description	Size	Product Name	Day	Aft.	Nite
			Number of Units		
Portland		Cement	10		
Lumnite					
Calseal					
Mud	50#		1		
Mud	100#				
Other (Describe)					

OTHER

Water hauling 48 miles 2 loads
Core boxes: size/ no.
Length of waterline:
Lost tools: Description

Lost bits: Size Serial no.
Depth: ft. Hole #
Casing lost or left in hole: Size ft.
for Client Hole #
Longco Hole #

Bit changes: (Include first bit in hole)

Size	Serial #	Depth

Shift	DRILLERS	Hrs.	HELPERS	Hrs.	TRUCK DRIVERS	Hrs.
A	[illegible]	10	[illegible]	10		
B	[illegible]	7	[illegible]	8		
C	[illegible]	9	[illegible]	8		

Remarks: Set Casing to 101' Cement
Lost 7 & 7 to 72 [illegible] could not [illegible]

NOTE: If item is chargeable to client, place circle around time entry. Please follow instructions on reverse side.

CLIENT

LONGYEAR COMPANY
Contracting Division
General Office
Minneapolis, Minnesota 55414

"DAILY DRILL REPORT"

Contract: Laurel R' Date: 5 (MONTH) 25 (DAY) 1977 Drill GD15W (TYPE) / 12201 (DRILL NO.) / (TRUCK NO.)

Location: Laurel Ag Foreman's Signature: Stan Wilson

Shift	Hole No.	Angle	Material Drilled	Bit Size & Type	Footage Summary: Drilling From	Drilling To	Reaming From	Reaming To	Feet: Drilled or Reamed	Feet: Core Recovered	Total Casing in Hole: Size	Total Casing in Hole: Footage
Day A	1-12-29	-1		5 5/8	355	565			210			
Aft B				5 5/8	565	775			210			
Nite C				5 5/8	775	1075			300			

Hourly Distribution	Day	Aft.	Nite
Core Drilling			
Handling Rod (change bit)			
Overburden - rock bit			
Collaring Hole - Dia. bit			
Rotary Drilling	X	7	7
Handling Rod (bit)		1	1
Rock Bit - Overburden			
Reaming (to)			
Casing – Placing			
– Pulling			
Delays - Client Acct.			
Cementing - Handling Rods			
- Prep Hole & Grout			
- Setting			
- Drilling			
Moving - Hole to Hole			
Rigging Up - Rigging Down			
Mix Mud			
Condition Hole, Lost Circulation			
Surveying, Inclination Test			
Mobilization/Demobilization			
Other (Explain)			
Total Hours	X	X	X
Driller's Initials			

Supplies Consumed

Description	Size	Product Name	Day	Aft.	Nite
			Number of Units		
Portland					
Lumnite					
Calseal					
Mud	50#				
Mud	100#				
Other (Describe)					
Celex			2		
Poxtad			2		
Solo 011	100#		2		
CC 16			2		

OTHER

Water hauling 48 miles 2 loads
Core boxes: size/ no.
Length of waterline: Water haul 20 miles 1 way
Lost tools: Description

Lost bits: Size Serial no.
Depth: ft. Hole #
Casing lost or left in hole: Size ft.
for Client Hole #
Longco Hole #
Bit changes: (Include first bit in hole)

Size	Serial #	Depth
#2 5 1/8		775

Shift	DRILLERS	Hrs.	HELPERS	Hrs.	TRUCK DRIVERS	Hrs.
A	Sullivan	8	Slaughter	8	K. Padilla	8
B	[illegible]	8	[illegible]	8		
C	[illegible]	8	[illegible]	8		

Remarks: Hanging Set @ 775 Reduce to 5 1/8 Cut

NOTE: If item is chargeable to client, place circle around time entry. Please follow instructions on reverse side.

CLIENT

LONGYEAR COMPANY
Contracting Division
General Office
Minneapolis, Minnesota 55414

"DAILY DRILL REPORT"

Contract: Baine R Date: 5 (MONTH) 26 (DAY) 19 77 Drill: GD15W (TYPE) / 12M (DRILL NO.) / (TRUCK NO.)

Location: Baine Ag Foreman's Signature: Steve Wilson

Shift	Hole No.	Angle	Material Drilled	Bit Size & Type	Footage Summary: Drilling From	Drilling To	Reaming From	Reaming To	Feet: Drilled or Reamed	Core Recovered	Total Casing in Hole: Size	Footage
Day A	2-12-Ag-1			5 1/8	1075	1290			215			
Aft B				5 1/8	1290	1470			180			
Nite C				5 1/8	1470	1545			75			

Hourly Distribution	Day	Aft.	Nite
Core Drilling			
Handling Rod (change bit)			
Overburden - rock bit			
Collaring Hole - Dia. bit			
Rotary Drilling	5	8	3
Handling Rod (bit)	2		2
Rock Bit - Overburden			
Reaming (to)			
Casing — Placing			
— Pulling			
Delays - Client Acct.			
Cementing - Handling Rods			
- Prep Hole & Grout			
- Setting			
- Drilling			
Moving - Hole to Hole			
Rigging Up - Rigging Down			3
Mix Mud			
Condition Hole, Lost Circulation			(3)
Surveying, Inclination Test			
Mobilization/Demobilization			
Other (Explain)			
	1		
Total Hours	8	8	8
Driller's Initials			

Supplies Consumed

Description	Size	Product Name	Day	Aft.	Nite
			Number of Units		
Portland					
Lumnite					
Calseal					
Mud	50#				16
Mud	100#				
Other (Describe)					
Soda Ash			1	1	
Cellex			1		
Aerfoil			1		
QC 16			1	1	

OTHER

Water hauling 96 miles 4 loads
Core boxes: size/ no.
Length of waterline:
Lost tools: Description

Lost bits: Size Serial no.
Depth: ft. Hole #
Casing lost or left in hole: Size ft.
for Client Hole #
Longco Hole #

Bit changes: (Include first bit in hole)

	Size	Serial #	Depth
#3	5 1/8		1215
#4	5 1/8		1470

Shift	DRILLERS	Hrs.	HELPERS	Hrs.	TRUCK DRIVERS	Hrs.
A	Wilson	8	Lawson	8	Padilla	10
B	Holek	8	Bill Holek	8		
C	Erickson	8	Baker	8		

Remarks: Change Bits @ 1215 & 1470 LOST CIRCULATION @ 1545

NOTE: If item is chargeable to client, place circle around time entry. Please follow instructions on reverse side.

CLIENT

LONGYEAR COMPANY
Contracting Division
General Office
Minneapolis, Minnesota 55414

"DAILY DRILL REPORT"

Contract: Lowe R Date: 5 (MONTH) 27 (DAY) 19 77 Drill GD 15W (TYPE) / 12 (DRILL NO.) / 1 (TRUCK NO.)

Location: Lowe A Foreman's Signature: Steve Wilson

Shift	Hole No.	Angle	Material Drilled	Bit Size & Type	Footage Summary: Drilling From	Drilling To	Reaming From	Reaming To	Feet: Drilled or Reamed	Feet: Core Recovered	Total Casing in Hole: Size	Total Casing in Hole: Footage
Day A	142-29-1			5 1/8	1525	1600			45			
Aft B												
					1640	1650			10			
Nite C					1600	1645			45			

Hourly Distribution	Day	Aft.	Nite
Core Drilling			
Handling Rod (change bit)			
Overburden - rock bit			
Collaring Hole - Dia. bit			
Rotary Drilling	6	3	3
Handling Rod (bit)		3	3
Rock Bit - Overburden			
Reaming (to)			
Casing — Placing			
— Pulling			
Delays - Client Acct.			
Cementing - Handling Rods			
- Prep Hole & Grout			
- Setting			
- Drilling			
Moving - Hole to Hole			
Rigging Up - Rigging Down			4
Mix Mud			
Condition Hole, Lost Circulation	(2)	(2)	(2)
Surveying, Inclination Test			
Mobilization/Demobilization			
Other (Explain)			
Total Hours	X	X	X
Driller's Initials			

Supplies Consumed

Description	Size	Product Name	Day	Aft.	Nite
			Number of Units		
Portland					
Lumnite					
Calseal					
Mud	50#		15	5	5
Mud	100#				
Other (Describe)					
Cellex			1	1	1
Dextrid			1	1	1
Kwikseal			1	1	1
Super gel			1	1	
CC-16			2		

OTHER

Water hauling 144 miles 6 loads

Core boxes: size/ no.

Length of waterline:

Lost tools: Description

Lost bits: Size Serial no.

Depth: ft. Hole #

Casing lost or left in hole: Size ft.

for Client Hole #

Longco Hole #

Bit changes: (Include first bit in hole)

	Size	Serial #	Depth
#5	5 1/8		1550 1650
#6	5 1/8		1645

Shift	DRILLERS	Hrs.	HELPERS	Hrs.	TRUCK DRIVERS	Hrs.
A	Hobson	8	Lawrence	8	Padilla	16
B	[illegible]	8	Pistelli	8		
C	[illegible]	8	Bridges	8		

Remarks: Casing set @ 1650 & 1645

NOTE: If item is chargeable to client, place circle around time entry. Please follow instructions on reverse side.

CLIENT

LONGYEAR COMPANY
Contracting Division
General Office
Minneapolis, Minnesota 55414

"DAILY DRILL REPORT"

Contract: Lawrence R' Date: 5 (MONTH) 28 (DAY) 1977 Drill GD 15W (TYPE) 1 (DRILL NO.) 1 (TRUCK NO.)

Location: Lawrence Co Foreman's Signature: Steve Wilson

Shift	Hole No.	Angle	Material Drilled	Bit Size & Type	Footage Summary: Drilling From	Drilling To	Reaming From	Reaming To	Feet: Drilled or Reamed	Feet: Core Recovered	Total Casing in Hole: Size	Total Casing in Hole: Footage
Day A	1-12-29-1			5 1/8	1695	1725			30			
Aft B					1725	1754			29			
Nite C					1754	1755			1			

Hourly Distribution	Day	Aft.	Nite
Core Drilling			
Handling Rod (change bit)			
Overburden - rock bit			
Collaring Hole - Dia. bit			
Rotary Drilling	3	4	3
Handling Rod (bit)	2		3
Rock Bit - Overburden			
Reaming (to)			
Casing – Placing			
– Pulling			
Delays - Client Acct.			
Cementing - Handling Rods			
- Prep Hole & Grout			
- Setting			
- Drilling			
Moving - Hole to Hole			
Rigging Up - Rigging Down			
Mix Mud			
Condition Hole, Lost Circulation	(5)	(2)	(2) (5)
Surveying, Inclination Test			
Mobilization/Demobilization			
Other (Explain)			
[illegible]	1	1	
Total Hours	X	X	X
Driller's Initials			

Supplies Consumed

Description	Size	Product Name	Day	Aft.	Nite
			Number of Units		
Portland					
Lumnite					
Calseal					
Mud	50#				
Mud	~~100#~~	gel	5	10	5
Other (Describe)					
Hi-Seal			1	1	
Celox			1	1	
Lost A			1	1	
Fast Set (used)			2	1	1

OTHER

Water hauling 120 miles 5 loads
Core boxes: size/ no.
Length of waterline:
Lost tools: Description

Lost bits: Size Serial no.
Depth: ft. Hole #
Casing lost or left in hole: Size ft.
for Client Hole #
Longco Hole #

Bit changes: (Include first bit in hole)

Size	Serial #	Depth
#9 5 1/8		1725
#9 5 1/8		1755

Shift	DRILLERS	Hrs.	HELPERS	Hrs.	TRUCK DRIVERS	Hrs.
A	[illegible]	4	[illegible]	4	K Peddler	12
B	[illegible]	4	[illegible]	4		
C	[illegible]	4	[illegible]	4		

Remarks:
[illegible] 1725 & 1755

NOTE: If item is chargeable to client, place circle around time entry. Please follow instructions on reverse side.

CLIENT

LONGYEAR COMPANY
Contracting Division
General Office
Minneapolis, Minnesota 55414

"DAILY DRILL REPORT"

Contract: Lowe R Date: 5 29 1977 (MONTH DAY) Drill: GD15W-1 (TYPE) 12M1 (DRILL NO.) / (TRUCK NO.)

Location: Lowe Ry Foreman's Signature: Stan Wilson

Shift	Hole No.	Angle	Material Drilled	Bit Size & Type	Footage Summary: Drilling From	Drilling To	Reaming From	Reaming To	Feet: Drilled or Reamed	Core Recovered	Total Casing in Hole: Size	Footage
Day A	2-12-29-1				1755	1800			45			
Aft B												
					1800	1820			20			
Nite C												
					1820	1910			90			

Hourly Distribution	Day	Aft.	Nite
Core Drilling			
Handling Rod (change bit)			
Overburden - rock bit			
Collaring Hole - Dia. bit			
Rotary Drilling	2	4	7
Handling Rod (bit)			
Rock Bit - Overburden			
Reaming (to)			
Casing — Placing			
— Pulling			
Delays - Client Acct.			
Cementing - Handling Rods			
- Prep Hole & Grout			
- Setting			
- Drilling			
Moving - Hole to Hole			
Rigging Up - Rigging Down			
Mix Mud			
Condition Hole, Lost Circulation	(1)		(1)
Surveying, Inclination Test			
Mobilization/Demobilization			
Other (Explain)			
Equipment Down	4	4	
Total Hours	7	7	7
Driller's Initials			

Supplies Consumed

Description	Size	Product Name	Day	Aft.	Nite
			Number of Units		
Portland					
Lumnite					
Calseal					
Mud	50#		5	5	5
Mud	100#				
Other (Describe)					
Celtex			1		
Quick Seal			1	1	1

OTHER

Water hauling 72 miles 3 loads

Core boxes: size/ no.

Length of waterline:

Lost tools: Description

Lost bits: Size Serial no.

Depth: ft. Hole #

Casing lost or left in hole: Size ft.

for Client Hole #

Longco Hole #

Bit changes: Size Serial # Depth

(Include first bit in hole)

Shift	DRILLERS	Hrs.	HELPERS	Hrs.	TRUCK DRIVERS	Hrs.
A	Hutson	8	Lehrsen	8	Padilla	8
B	[illegible]	8	[illegible]	8		
C	[illegible]	8	[illegible]	8		

Remarks:

Change hole (Tue) day

Water in mud pump all

NOTE: If item is chargeable to client, place circle around time entry. Please follow instructions on reverse side.

CLIENT

LONGYEAR COMPANY
Contracting Division
General Office
Minneapolis, Minnesota 55414

"DAILY DRILL REPORT"

Contract: Bowie R. Date: 5-30 (MONTH DAY) 19 77 Drill 15W (TYPE) / 11142 (DRILL NO.) / (TRUCK NO.)

Location: Bowie Az. Foreman's Signature: Stan Wilson

Shift	Hole No.	Angle	Material Drilled	Bit Size & Type	Footage Summary: Drilling From	Drilling To	Reaming From	Reaming To	Feet: Drilled or Reamed	Core Recovered	Total Casing in Hole: Size	Footage
Day A	2-12-29-2			5 1/8	1910	1910			60			
Aft B				5 1/8	1970	2000			30			
Nite C												

Hourly Distribution	Day	Aft.	Nite
Core Drilling			
Handling Rod (change bit)			
Overburden - rock bit			
Collaring Hole - Dia. bit			
Rotary Drilling	5	2	
Handling Rod (bit)	3	2	
Rock Bit - Overburden			
Reaming (to)			
Casing – Placing			
– Pulling			
Delays - Client Acct.		(4)	(6)
Cementing - Handling Rods			
- Prep Hole & Grout			
- Setting			
- Drilling			
Moving - Hole to Hole			
Rigging Up - Rigging Down			
Mix Mud			
Condition Hole, Lost Circulation			
Surveying, Inclination Test			
Mobilization/Demobilization			
Other (Explain)			2
Total Hours	8	8	8
Driller's Initials	SW		

Supplies Consumed

Description	Size	Product Name	Day	Aft.	Nite
			Number of Units		
Portland					
Lumnite					
Calseal					
Mud	50#				
Mud	100#				
Other (Describe)					
		gel	3		
		cellex	1		

OTHER

Water hauling 68 miles 3 loads
Core boxes: size/ no.
Length of waterline:
Lost tools: Description

Lost bits: Size Serial no.
Depth: ft. Hole #
Casing lost or left in hole: Size ft.
for Client Hole #
Longco Hole #
Bit changes: (Include first bit in hole) Size Serial # Depth

Shift	DRILLERS	Hrs.	HELPERS	Hrs.	TRUCK DRIVERS	Hrs.
A	S. WILSON	8	S. JACKSON	8	K. PADILLA	8
B	R. HEALTH	8	R W. HEALTH	8		
C	R. ROCKHILL	8	R. BRIDGES	8		

Remarks: COME OUT TO LOG logging Hole

NOTE: If item is chargeable to client, place circle around time entry. Please follow instructions on reverse side.

CLIENT

LONGYEAR COMPANY
Contracting Division
General Office
Minneapolis, Minnesota 55414

"DAILY DRILL REPORT"

Contract: Bowie R Date: 5/22/77 (MONTH / DAY) 19 ___ Drill (TYPE) 15W (DRILL NO.) 1 (TRUCK NO.) 1142

Location: Bowie AZ Foreman's Signature: Stan Wilson

Shift	Hole No.	Angle	Material Drilled	Bit Size & Type	Footage Summary: Drilling From	Drilling To	Reaming From	Reaming To	Feet: Drilled or Reamed	Feet: Core Recovered	Total Casing in Hole: Size	Total Casing in Hole: Footage
Day A	2-12-29-1											
Aft B					(travel)							
Nite C												

Hourly Distribution	Day	Aft.	Nite
Core Drilling			
Handling Rod (change bit)			
Overburden - rock bit			
Collaring Hole - Dia. bit			
Rotary Drilling			
Handling Rod (bit)			
Rock Bit - Overburden			
Reaming (to)			
Casing — Placing			
— Pulling			
Delays - Client Acct.			
Cementing - Handling Rods			
- Prep Hole & Grout			
- Setting			
- Drilling			
Moving - Hole to Hole			
Rigging Up - Rigging Down			
Mix Mud			
Condition Hole, Lost Circulation			
Surveying, Inclination Test			
Mobilization/Demobilization			
Other (Explain)			
Total Hours			
Driller's Initials			

Supplies Consumed

Description	Size	Product Name	Day	Aft.	Nite
			Number of Units		
Portland					
Lumnite					
Calseal					
Mud	50#				
Mud	100#				
Other (Describe)					

OTHER

Water hauling ___ miles ___ loads

Core boxes: ___ size/ ___ no.

Length of waterline: ___

Lost tools: Description ___

Lost bits: Size ___ Serial no. ___

Depth: ___ ft. Hole # ___

Casing lost or left in hole: Size ___ ft.

for Client ___ Hole # ___

Longco ___ Hole # ___

Bit changes: (Include first bit in hole) Size ___ Serial # ___ Depth ___

Other: ___

Shift	DRILLERS	Hrs.	HELPERS	Hrs.	TRUCK DRIVERS	Hrs.
A	S. Wilson	3				
B	B. Heath	4				
C	B. Buckhall	5				

Remarks: (A) travel from Casa Grande AZ

(B) travel from Mesa AZ

(C) travel from Congress AZ

NOTE: If item is chargeable to client, place circle around time entry. Please follow instructions on reverse side.

CLIENT

LONGYEAR COMPANY
Contracting Division
General Office
Minneapolis, Minnesota 55414

"DAILY DRILL REPORT"

Contract: Bowie 'R' Date: 5 (MONTH) 23 (DAY) 1977 Drill GD15W (TYPE) / 12211 (DRILL NO.) / (TRUCK NO.)

Location: Bowie Az Foreman's Signature: Steve Welsh

Shift	Hole No.	Angle	Material Drilled	Bit Size & Type	Footage Summary: Drilling From	Drilling To	Reaming From	Reaming To	Feet: Drilled or Reamed	Core Recovered	Total Casing in Hole: Size	Footage
Day A	2-12-29-1			5 3/8	0	30			30			
Aft B				5 3/8	30	52			22			
Nite C				5 3/8	52	110			58			
				7 7/8			0	106	106			

Hourly Distribution	Day	Aft.	Nite
Core Drilling			
Handling Rod (change bit)			
Overburden - rock bit			
Collaring Hole - Dia. bit			
Rotary Drilling	3	3	3
Handling Rod (bit)			
Rock Bit - Overburden			
Reaming (0 to 106)			(4)
Casing — Placing			
— Pulling			
Delays - Client Acct.			
Cementing - Handling Rods			
- Prep Hole & Grout			
- Setting			
- Drilling			
Moving - Hole to Hole			
Rigging Up - ~~Rigging Down~~	2		
Mix Mud		2	1
Condition Hole, Lost Circulation			
Surveying, Inclination Test			
Mobilization/Demobilization			
Other (Explain)			
Equip Repair	4	3	
Total Hours	9	8	7
Driller's Initials			

Supplies Consumed

Description	Size	Product Name	Day	Aft.	Nite
			Number of Units		
Portland					
Lumnite					
Calseal					
Mud	50#		4		
Mud	100#				
Other (Describe)					
CMC			1		
Dextrid			1		

OTHER

Water hauling 48 miles 2 loads
Core boxes: size/ no.
Length of waterline:
Lost tools: Description
Lost bits: Size Serial no.
Depth: ft. Hole #
Casing lost or left in hole: Size ft.
for Client Hole #
Longco Hole #
Bit changes: (Include first bit in hole) Size #1 5 5/8 Serial # Depth 0

Shift	DRILLERS	Hrs.	HELPERS	Hrs.	TRUCK DRIVERS	Hrs.
A	S. Welsh	9	Rick Padilla	9		
B	R. Heath	7	Bill Heath	7		
C	R. Rockhill	9	Gene Rudge	9		

Remarks: Equip down to 50' on delay to mud
Unload Petrobulk 2 loads

NOTE: If item is chargeable to client, place circle around time entry. Please follow instructions on reverse side.

CLIENT

LONGYEAR COMPANY
Contracting Division
General Office
Minneapolis, Minnesota 55414

"DAILY DRILL REPORT"

Contract: Bowie R' Date: 5 (MONTH) 24 (DAY) 1977 Drill GD 150W (TYPE) 1 (DRILL NO.) 2 (TRUCK NO.)

Location: Bowie Ag Foreman's Signature: Steve Wilson

Shift	Hole No.	Angle	Material Drilled	Bit Size & Type	Footage Summary: Drilling From	Drilling To	Reaming From	Reaming To	Feet: Drilled or Reamed	Feet: Core Recovered	Total Casing in Hole: Size	Total Casing in Hole: Footage
Day A	2-12-29-1			5 5/8	106							
Aft B												
Nite C				5 5/8	106	355			241			

Hourly Distribution	Day	Aft.	Nite
Core Drilling			
Handling Rod (change bit)			
Overburden - rock bit			
Collaring Hole - Dia. bit			
Rotary Drilling			6
Handling Rod (bit)			
Rock Bit - Overburden			
Reaming (to)			
Casing — Placing	6		
— Pulling			
Delays - Client Acct.			
Cementing - Handling Rods	1		
- Prep Hole & Grout			
- Setting	3	8	2
- Drilling			
Moving - Hole to Hole			
Rigging Up - Rigging Down			
Mix Mud			
Condition Hole, Lost Circulation			
Surveying, Inclination Test			
Mobilization/Demobilization			
Other (Explain)			
Total Hours	10	8	8
Driller's Initials			

Supplies Consumed

Description	Size	Product Name	Day	Aft.	Nite
			Number of Units		
Portland		Cement	10		
Lumnite					
Calseal					
Mud	50#				
Mud	100#				
Other (Describe)					

OTHER

Water hauling 48 miles 2 loads
Core boxes: size/ no.
Length of waterline:
Lost tools: Description

Lost bits: Size Serial no.
Depth: ft. Hole #
Casing lost or left in hole: Size ft.
for Client Hole #
Longco Hole #
Bit changes: Size Serial # Depth
(Include first bit in hole)

Shift	DRILLERS	Hrs.	HELPERS	Hrs.	TRUCK DRIVERS	Hrs.
A	S. Wilson	10	Padilla	10		
B	R. Heath	8	R.W. Heath	8		
C	R. Rakhie	8	R. Bridges	8		

Remarks: Set Casing to 106' Cement
Tried to get to #2 location could not return
to #1

NOTE: If item is chargeable to client, place circle around time entry. Please follow instructions on reverse side.

CLIENT

LONGYEAR COMPANY
Contracting Division
General Office
Minneapolis, Minnesota 55414

"DAILY DRILL REPORT"

Contract: Bowie 'R' Date: 5 (MONTH) 25 (DAY) 1977 Drill GD15W (TYPE) / 12M (DRILL NO.) / (TRUCK NO.)

Location: Bowie Az Foreman's Signature: Stan Wilson

Shift	Hole No.	Angle	Material Drilled	Bit Size & Type	Footage Summary: Drilling From	Drilling To	Reaming From	Reaming To	Feet: Drilled or Reamed	Feet: Core Recovered	Total Casing in Hole: Size	Total Casing in Hole: Footage
Day A	1-12-29	-1		5 5/8	355	565			210			
Aft B				5 5/8	565	775			210			
Nite C				5 1/8	775	1075			300			

Hourly Distribution	Day	Aft.	Nite
Core Drilling			
Handling Rod (change bit)			
Overburden - rock bit			
Collaring Hole - Dia. bit			
Rotary Drilling	8	7	7
Handling Rod (bit)		1	1
Rock Bit - Overburden			
Reaming (to)			
Casing — Placing			
— Pulling			
Delays - Client Acct.			
Cementing - Handling Rods			
- Prep Hole & Grout			
- Setting			
- Drilling			
Moving - Hole to Hole			
Rigging Up - Rigging Down			
Mix Mud			
Condition Hole, Lost Circulation			
Surveying, Inclination Test			
Mobilization/Demobilization			
Other (Explain)			
Total Hours	8	8	8
Driller's Initials			

Supplies Consumed

Description	Size	Product Name	Day	Aft.	Nite
			Number of Units		
Portland					
Lumnite					
Calseal					
Mud	50#				
Mud	100#				
Other (Describe)					
Callex			2		
Dextrid			2		
Soda Ash	100#		2		
CC 16			2		

OTHER

Water hauling 48 miles 2 loads
Core boxes: size/ no.
Length of waterline: Water haul 28 miles 1 way
Lost tools: Description
Lost bits: Size Serial no.
Depth: ft. Hole #
Casing lost or left in hole: Size ft.
for Client Hole #
Longco Hole #
Bit changes: (Include first bit in hole) Size #2 5 1/8 Serial # Depth 775

Shift	DRILLERS	Hrs.	HELPERS	Hrs.	TRUCK DRIVERS	Hrs.
A	Swanson	8	S. Lawrson	8	R. Padilla	8
B	G. Heath	8	B. W. Heath	8		
C	R. Rockwell	8	G. Bridges	8		

Remarks: Change Bits @ 775 reduce to 5 1/8 Bit

NOTE: If item is chargeable to client, place circle around time entry. Please follow instructions on reverse side.

CLIENT

LONGYEAR COMPANY

Contracting Division
General Office
Minneapolis, Minnesota 55414

"DAILY DRILL REPORT"

Contract: Bowie R Date: 5 (MONTH) 26 (DAY) 19 77 Drill GD15W (TYPE) 1 (DRILL NO.) 12M (TRUCK NO.)

Location: Bowie Az Foreman's Signature: Stan Wilson

Shift	Hole No.	Angle	Material Drilled	Bit Size & Type	Footage Summary: Drilling From	Drilling To	Reaming From	Reaming To	Feet: Drilled or Reamed	Feet: Core Recovered	Total Casing in Hole: Size	Total Casing in Hole: Footage
Day A	2-12-24-1			5 1/2	1075	1290			215			
Aft B				5 1/8	1290	1470			180			
Nite C				5 1/8	1470	1545			75			

Hourly Distribution	Day	Aft.	Nite
Core Drilling			
Handling Rod (change bit)			
Overburden - rock bit			
Collaring Hole - Dia. bit			
Rotary Drilling	5	8	3
Handling Rod (bit)	2		2
Rock Bit - Overburden			
Reaming (to)			
Casing — Placing			
— Pulling			
Delays - Client Acct.			
Cementing - Handling Rods			
- Prep Hole & Grout			
- Setting			
- Drilling			
Moving - Hole to Hole			
Rigging Up - Rigging Down			
Mix Mud			
Condition Hole, Lost Circulation		(3)	
Surveying, Inclination Test			
Mobilization/Demobilization			
Other (Explain)			
Total Hours	8	8	8

Driller's Initials

Supplies Consumed

Description	Size	Product Name	Day	Aft.	Nite
			Number of Units		
Portland					
Lumnite					
Calseal					
Mud	50#				16
Mud	100#				
Other (Describe)					
Soda Ash			1	1	
Cellex			1		
Dextrid			1		
CC-16			1		

OTHER

Water hauling 96 miles 4 loads
Core boxes: size/ no.
Length of waterline:
Lost tools: Description
Lost bits: Size Serial no.
Depth: ft. Hole #
Casing lost or left in hole: Size ft
for Client Hole #
Longco Hole #

Bit changes: (Include first bit in hole)	Size	Serial #	Depth
#3	5 1/8		1215
#4	5 1/8		1470

Shift	DRILLERS	Hrs.	HELPERS	Hrs.	TRUCK DRIVERS	Hrs.
A	Wilson	8	Lausen	8	Padilla	10
B	Heath	8	Bill Heath	8		
C	Rickhill	8	Rodgers	8		

Remarks: Change Bits @ 1215 & 1470' LOST CIRCULATION @ 1545'

NOTE: If item is chargeable to client, place circle around time entry. Please follow instructions on reverse side.

CLIENT

LONGYEAR COMPANY
Contracting Division
General Office
Minneapolis, Minnesota 55414

"DAILY DRILL REPORT"

Contract: Lowe 'R' Date: 5 (MONTH) 27 (DAY) 19 22 Drill GD 15W (TYPE) / 12 DM (DRILL NO.) / (TRUCK NO.)

Location: Lowe Ag Foreman's Signature: Stan Wilson

Shift	Hole No.	Angle	Material Drilled	Bit Size & Type	Footage Summary: Drilling From	Drilling To	Reaming From	Reaming To	Feet: Drilled or Reamed	Feet: Core Recovered	Total Casing in Hole: Size	Total Casing in Hole: Footage
Day A	1-12-29-1			5 1/8	1545	1640			95			
Aft B												
					1640	1650			10			
Nite C					1650	1695			45			

Hourly Distribution	Day	Aft.	Nite
Core Drilling			
Handling Rod (change bit)			
Overburden - rock bit			
Collaring Hole - Dia. bit			
Rotary Drilling	6	3	3
Handling Rod (bit)		3	3
Rock Bit - Overburden			
Reaming (to)			
Casing — Placing			
— Pulling			
Delays - Client Acct.			
Cementing - Handling Rods			
- Prep Hole & Grout			
- Setting			
- Drilling			
Moving - Hole to Hole			
Rigging Up - Rigging Down			
Mix Mud			
~~Condition Hole~~, Lost Circulation	(2)	(2)	(2)
Surveying, Inclination Test			
Mobilization/Demobilization			
Other (Explain)			
Total Hours	8	8	8
Driller's Initials			

Supplies Consumed

Description	Size	Product Name	Day	Aft.	Nite
			Number of Units		
Portland					
Lumnite					
Calseal					
Mud	50#		15	5	5
Mud	100#				
Other (Describe)					
Cellex			1	1	1
dextrid			1	1	1
Quick Seal			1	1	1
Soda ash			1	1	
CC-16			2		

OTHER

Water hauling 144 miles 6 loads
Core boxes: size/ no.
Length of waterline:
Lost tools: Description

Lost bits: Size Serial no.
Depth: ft. Hole #
Casing lost or left in hole: Size ft.
for Client Hole #
Longco Hole #

Bit changes: (Include first bit in hole)	Size	Serial #	Depth
#5	5 1/8		1650 1650
#6	5 1/8		1695

Shift	DRILLERS	Hrs.	HELPERS	Hrs.	TRUCK DRIVERS	Hrs.
A	Wilson	8	Lawson	8	Padilla	16
B	Smith	8	R W Smith	8		
C	Parkhill	8	Bridges	8		

Remarks: Gauge bits @ 1650 & 1695

NOTE: If item is chargeable to client, place circle around time entry. Please follow instructions on reverse side.

CLIENT

LONGYEAR COMPANY
Contracting Division
General Office
Minneapolis, Minnesota 55414

"DAILY DRILL REPORT"

Contract: Sauve 'R' Date: 5 (MONTH) 28 (DAY) 1977 Drill GD 15W (TYPE) 1 (DRILL NO.) 2 (TRUCK NO.)

Location: Sauve Az Foreman's Signature: Steve Wilson

Shift	Hole No.	Angle	Material Drilled	Bit Size & Type	Footage Summary: Drilling From	Drilling To	Reaming From	Reaming To	Feet: Drilled or Reamed	Core Recovered	Total Casing in Hole: Size	Footage
Day A	1-12-29	-1		5 1/8	1695	1725			30			
Aft B					1725	1754			29			
Nite C					1754	1755			1			

Hourly Distribution	Day	Aft.	Nite
Core Drilling			
Handling Rod (change bit)			
Overburden - rock bit			
Collaring Hole - Dia. bit			
Rotary Drilling	3	2	3
Handling Rod (bit)	2		3
Rock Bit - Overburden			
Reaming (to)			
Casing — Placing			
— Pulling			
Delays - Client Acct.			
Cementing - Handling Rods			
- Prep Hole & Grout			
- Setting			
- Drilling			
Moving - Hole to Hole			
Rigging Up - Rigging Down			
Mix Mud			
~~Condition Hole~~, Lost Circulation	(3)	(3)	(2)
Surveying, Inclination Test			
Mobilization/Demobilization			
Other (Explain)			
Temp Repair	2	1	
Total Hours	8	8	8
Driller's Initials			

Supplies Consumed

Description	Size	Product Name	Day	Aft.	Nite
			Number of Units		
Portland					
Lumnite					
Calseal					
Mud	50#				
Mud	~~100#~~	gunk gel 50	5	10	5
Other (Describe)					
Hy Seal			1	1	
Celrex			1	1	
Portland			1	1	
Cure Seal (small)			2	1	1

OTHER

Water hauling 120 miles 5 loads
Core boxes: size/ no.
Length of waterline:
Lost tools: Description

Lost bits: Size Serial no.
Depth: ft. Hole #
Casing lost or left in hole: Size ft.
for Client Hole #
Longco Hole #

Bit changes: (Include first bit in hole)	Size	Serial #	Depth
#7	5 1/8		1725
#7	5 1/8		1755

Shift	DRILLERS	Hrs.	HELPERS	Hrs.	TRUCK DRIVERS	Hrs.
A	Wilson	8	Lawson	8	R. Padilla	12
B	Heath	8	Bill Heath	8		
C	Lockhart	8	Bridges	8		

Remarks: Change Bits @ 1725 & 1755

NOTE: If item is chargeable to client, place circle around time entry. Please follow instructions on reverse side.

CLIENT

LONGYEAR COMPANY
Contracting Division
General Office
Minneapolis, Minnesota 55414

"DAILY DRILL REPORT"

Contract: Sowi R' Date: 5 29 1977 (MONTH DAY) Drill: GD 15W (TYPE) 1 (DRILL NO.) 2 (TRUCK NO.)

Location: Sowi Cy Foreman's Signature: Stan Wilson

Shift	Hole No.	Angle	Material Drilled	Bit Size & Type	Footage Summary: Drilling From	Drilling To	Reaming From	Reaming To	Feet: Drilled or Reamed	Core Recovered	Total Casing in Hole: Size	Footage
Day A	2-12-29-1				1755	1800			45			
Aft B					1800	1820			20			
Nite C					1820	1910			90			

Hourly Distribution	Day	Aft.	Nite
Core Drilling			
Handling Rod (change bit)			
Overburden - rock bit			
Collaring Hole - Dia. bit			
Rotary Drilling	3	4	7
Handling Rod (bit)			
Rock Bit - Overburden			
Reaming (to)			
Casing — Placing			
— Pulling			
Delays - Client Acct.			
Cementing - Handling Rods			
- Prep Hole & Grout			
- Setting			
- Drilling			
Moving - Hole to Hole			
Rigging Up - Rigging Down			
Mix Mud			
Condition Hole, Lost Circulation	1		1
Surveying, Inclination Test			
Mobilization/Demobilization			
Other (Explain)			
Pump Repair	4	4	
Total Hours	8	8	8
Driller's Initials			

Supplies Consumed

Description	Size	Product Name	Day	Aft.	Nite
			Number of Units		
Portland					
Lumnite					
Calseal					
Mud	50#		5	5	5
Mud	100#				
Other (Describe)					
Cellex			1		
Kwick Seal			1	1	1

OTHER

Water hauling 72 miles 3 loads
Core boxes: _____ size/ _____ no.
Length of waterline: _____
Lost tools: Description _____

Lost bits: Size _____ Serial no. _____
Depth: _____ ft. Hole # _____
Casing lost or left in hole: Size _____ ft. _____
for Client _____ Hole # _____
Longco _____ Hole # _____

Bit changes: (Include first bit in hole)

Size	Serial #	Depth

Shift	DRILLERS	Hrs.	HELPERS	Hrs.	TRUCK DRIVERS	Hrs.
A	Wilson	8	Lawson	8	Padilla	8
B	[illegible]	8	[illegible]	8		
C	[illegible]	8	[illegible]	8		

Remarks: Change Cable (Trip) day
work on Mud Pump all

NOTE: If item is chargeable to client, place circle around time entry. Please follow instructions on reverse side.

CLIENT

LONGYEAR COMPANY
Contracting Division
General Office
Minneapolis, Minnesota 55414

"DAILY DRILL REPORT"

Contract: Bowie R. Date: 5-30 (MONTH DAY) 19 77 Drill 15W (TYPE) 11142 (DRILL NO.) / (TRUCK NO.)

Location: Bowie Az. Foreman's Signature: Stan Wilson

Shift	Hole No.	Angle	Material Drilled	Bit Size & Type	Footage Summary: Drilling From	Drilling To	Reaming From	Reaming To	Feet: Drilled or Reamed	Feet: Core Recovered	Total Casing in Hole: Size	Total Casing in Hole: Footage
Day A	2-12-29-2			5 1/8	1910	1970			60			
Aft B				5 1/8	1970	2000			30			
Nite C												

Hourly Distribution	Day	Aft.	Nite
Core Drilling			
Handling Rod (change bit)			
Overburden - rock bit			
Collaring Hole - Dia. bit			
Rotary Drilling	5	2	
Handling Rod (bit)	3	2	
Rock Bit - Overburden			
Reaming (to)			
Casing – Placing			
– Pulling			
Delays - Client Acct.		4	6
Cementing - Handling Rods			
- Prep Hole & Grout			
- Setting			
- Drilling			
Moving - Hole to Hole			
Rigging Up - Rigging Down			
Mix Mud			
Condition Hole, Lost Circulation			
Surveying, Inclination Test			
Mobilization/Demobilization			
Other (Explain)			2
Total Hours	8	8	8
Driller's Initials	SW		

Supplies Consumed

Description	Size	Product Name	Day	Aft.	Nite
			Number of Units		
Portland					
Lumnite					
Calseal					
Mud	50#				
Mud	100#				
Other (Describe)					
		gel	3		
		cellex	1		

OTHER

Water hauling 68 miles 3 loads
Core boxes: _____ size/ _____ no.
Length of waterline: _____
Lost tools: Description _____

Lost bits: Size _____ Serial no. _____
Depth: _____ ft. Hole # _____
Casing lost or left in hole: Size _____ ft. _____
for Client _____ Hole # _____
Longco _____ Hole # _____

Bit changes: (Include first bit in hole)

Size	Serial #	Depth

Shift	DRILLERS	Hrs.	HELPERS	Hrs.	TRUCK DRIVERS	Hrs.
A	S. Wilson	8	S. Clarkson	8	R. Padilla	8
B	B. Health	8	B. W. Health	8		
C	R. Rockhill	8	B. Bridges	8		

Remarks: Come out to log logging Hole

NOTE: If item is chargeable to client, place circle around time entry. Please follow instructions on reverse side.

CLIENT

INVOICE

CENTURY GEOPHYSICAL CORPORATION

6650 E. Apache/Tulsa, Oklahoma 74115
Phone 918/838-9811

Union Carbide Corporation
1820 San Pedro N.E, Suite 11
Albuquerque, N.M. 87110

Attn: W. A. Street

Purchase Order: Verbal

INVOICE DATE June 29, 1977

INVOICE NO. № 2957

CLIENT NO.

TERMS NET 30 DAYS

DESCRIPTION			AMOUNT
BORE HOLE LOGGING SERVICES —	Bowie- June, 1977		
53.5	Extra Man Hrs. (2nd Operator)	@6.94/hr	$371.29
5	Days Per Diem	@26.00/da	130.00
			$501.29

FOR SERVICES PERFORMED IN COUNTY,
BY OUR PARTY U-34 Cochise, Arizona

CT-153

ORIGINAL

-298-A

CENTURY GEOPHYSICAL CORPORATION
LOGGING STATISTICAL REPORT

MONTH: MAY

COMPANY: UNION CARBIDE

AREA: BOWIE | SECTION | TWP | RANGE

COUNTY: COCHISE | STATE: ARIZONA

OPERATOR: R KEARNS

SUPERVISOR: HENDRICKS

PARTY HEADQUARTERS: GRANTS | PARTY NO. U-34

DATE →	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	MO.
LOGS																																
PER DIEM																											1	1	1	1	1	5
FOOTAGE — LONG HOLE																																
FOOTAGE — RING																																
FOOTAGE — GR.																																
FOOTAGE — DR.																																
TOTAL FOOTAGE																																
SETUPS																																
DRIVE TIME / MILES																																
STANDBY TIME																																
FIELD TIME																																
TOTAL TIME																											12.5	8.0	5.0	11.5	13.5	55.5

INVOICING INSTRUCTIONS

COMPANY: UNION CARBIDE CORP.

ADDRESS: 1828 SAN PEDRO NE SUITE 11
ALBUQUERQUE, NM. 87110

ATTENTION: W.A. STREET

PURCHASE ORDER NO.: VERBAL

FOOTAGE | GAMMA | DRIFT | SETUP | DRIVE | STANDBY

55.5	EXTRA MAN HOURS (2ND OPERATOR)	@ $6.94/HR	371.29
5	DAYS PER DIEM	@ 26.00/DAY	130.00
			$501.29

CVL

Oct. 4, 1977

Mr. Lastra -

Please approve this invoice then forward to your Grand Junction office for payment.

Thank you.

RECEIVED
OCT 11 1977
Albuquerque Office

Mrs. Jo Ann Shockey
Longyear Company
308 East Pima Street'
Phoenix, Arizona 85004

LONGYEAR COMPANY
General Offices: 925 Delaware Street S. E.
Minneapolis, Minnesota 55414, USA
Box 1368, Minneapolis, Minnesota 55440, USA
Telephone (612) 331-1331

INVOICE
9218

October 4, 1977

Mr. J. P. Lastra
Project Geologist
Union Carbide Corp.
1820 San Pedro N.E.
Suite 11
Albuquerque, New Mexico 87110

TERMS: PAYMENT DUE ON OR BEFORE

Exploratory drilling carried out during the month of May, 1977 in the vicinity of Bowie, Arizona as per the terms of our agreement dated May 20, 1977.

Hourly Rate Charge.	(see attached)	$110.00

Approved for Payment
John R. Lastra

(3) Except as otherwise provided in this Contract, Contractor shall provide and furnish in connection with its performance of the Work, all personnel and services and all materials, equipment and other things which are required for its performance of the Work (which materials, equipment and other things are sometimes hereinafter referred to in the singular as "Thing" and in the plural as "Things").

(4) The Work shall be performed and completed to the satisfaction of Owner's Representative (named in the Article entitled "OWNER'S AND CONTRACTOR'S REPRESENTATIVES") in strict accordance with the terms and conditions of this Contract (which terms and conditions are sometimes hereinafter referred to in the singular as "provision" and in the plural as "provisions").

ARTICLE II - CONTRACT PRICE

(1) Owner shall pay to Contractor for the performance of the Work hereunder a total amount (hereinafter called the "Contract Price") which shall be comprised of the sum of whichever of the following are set forth or provided for below: (a) the amounts set forth below; (b) the amounts determined at the rates set forth below; and (c) the costs set forth below. Except as may otherwise be provided in this Contract, all applicable Federal, State and local taxes are included in the Contract Price.

(a) Rotary Plug Drilling in the Following area: Cochise County, Arizona.

5" Rotary Plug Drilling

From 0 to 500 feet in depth	$6.95 per linear foot
From 500 to 1000 feet in depth	7.25 per linear foot
From 1000 to 1500 feet in depth	7.75 per linear foot
From 1500 to 2000 feet in depth	8.60 per linear foot

+ 7" Overburdern Drilling

From 0 to 100 feet in depth	9.30 per linear foot

~~Drilling costs include equipment and labor required for digging and backfilling pits.~~ AB by Mr. Sada by phone 5-25-77

(b) Hourly Rates

Hourly Drill Rig Rate of $60.00 per hour will apply when specified and approved by Owner's Representative for Work as follows: (1) Reaming and spot and/or sidewall coring.

OWNER WILL FURNISH SIDEWALL CORING TOOLS AT NO EXPENSE TO THE LONGYEAR Co. AND WILL HOLD GYEAR ESPONSIBLE R TOOL.

Hourly Drill Rig Rate of $55.00 per hour will apply when specified and approved by Owner's Representative for Work as follows: (1) Cementing - hole preparation, grouting and drilling, including necessary rod handling time; (2) hole stabilizing and/or hole plugging; and (3) installing, pulling casing; and (4) lost circulation time.

Hourly Standby Rate of $45.00 per hour will apply for (1) Moving between holes; (2) hole survey or inclination tests; and (3) standby or delays for the convenience or request of Owner.

Buckeye Wash, Arizona

Hole No.: 2-12-29-1

Driller: Longyear Company

Listed below are those items and/or charges in question with respect to the drilling of Hole 2-12-29-1 in Cochise County, Arizona.

2 hrs. setting time @ 55.00

O.K.

1) 10-hours charged during an 8 hour shift. Charges during this period are at a rig rate per hour. Therefore, only 8 hours are allowable during this shift.

5-24

2) A total of 10 hours were charged at a rig rate of $55/Hr. During this period the rig was down to allow the setting (drying) of cement. Therefore, a rate of $45/Hr. should be charged.

5-24

Corrected on June inv.

3) Hourly rate charges came into effect immediately upon the loss of circulation. No 2 hour allowance was made as stipulated in the UCC contract.

5-26

Not OK

They should pay all 3 hrs. but paid only 1 hr. owe us for 2 hrs. @ 55.00/hr. total 110.00 on next invoice

(see new contract)

HOURLY RATE CHARGE
LONGYEAR COMPANY

MONTH May, 1977

CONTRACT Bowie R'

Hole No.	Description	Dates 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Price	Amount
2	12-27-1	Last Circulation (See attached)																					(May)				2						2	55.00	110.00
		Credit for 2 hrs. deducted from our invoice #1160																																	

TO (NAME) Jake DATE 8/29/77

LOCATION Grand Jct., Colo FROM J.P. Lastra

SUBJECT Longyear Materials Invoice LOCATION Albuquerque, NM

Enclosed you will find partial invoices for materials used by Longyear in the drilling of holes 10-12-29-1 and 2-12-29-1 in Arizona. I have again contacted Longyear and requested complete invoices be sent directly to you.

John Lastra

REPLY IN SPACE BELOW.

DUPLICATE

SNAP OUT AND HOLD THIS COPY UNTIL REPLY RECEIVED. FORWARD BALANCE OF SET INTACT WITH CARBONS TO ADDRESSEE.

Aug. 22, 1977

PHOENIX, ARIZONA

275-5415

1, 1975

10, 1975

Mr. Lastra -

Attached are the copies you requested showing the prices for supplies we used on the two holes we were drilling on in June, our invoice #1344.

I hope this will be of some help to you. If you have any further questions, please feel free to call.

Regards,

Mrs. JoAnn Shockley

[illegible] COMPANY
[illegible]
PHOENIX, ARIZONA 85004

	PRICE FOB WHSE	PACKAGE
	117.25	50# BAG
	49.94	50# BAG
	132.24	50# BAG
	142.05	50# BAG
	22.00	50# BAG
	5.28	50# BAG
QUIK-GEL	4.50	50# BAG
MUD GEL	2.66	50# BAG
(Driscose)	------	50# BAG

LOST CIRCULATION MATERIALS

COTTONSEED HULLS	10.42	100# BAG	KWIK-SEAL	18.65	40# BAG
DIASEAL M	15.46	50# BAG	MICATEX (F,C)	11.22	50# BAG
FIBERTEX	10.57	40# BAG	PLUG-GIT	12.86	40# BAG
HY-SEAL	12.81	40# BAG	WALL-NUT (F,M,C)	13.43	50# BAG
JELFLAKE	16.48	25# BAG	WOLF	53.90	50# BAG

MUD CHEMICALS

Surflo B-33 -	9.45	Gal.	Torqtrim	54.17	5Gal Can
AKTAFLC-S	498.19	55GAL DR	K-LIG	21.76	50# BAG
ALDACIDE	55.25	50# BAG	LIME	4.57	50# BAG
ALUMINUM STEARATE	48.06	25# BAG	LOLOSS	101.03	50# BAG
BARAFLOC	10.71	1# CAN	POTASSIUM CHLORIDE (Salt)	16.78	100# BAG
BARAFOS	74.80	100# BAG	POTASSIUM HYDROXIDE	-----	100# BAG
BEN-EX	12.33	2# BAG	Q-BROXIN	26.94	50# BAG
BICARB OF SODA (Salt)	28.97	100# BAG	SALT	5.85	100# BAG
CALCIUM CHLOR-FLAKE	21.59	100# BAG	SAPP	-----	100# BAG
CALCIUM CHLOR-H.T.	21.59	80# BAG	SODA ASH	16.69	100# BAG
CALCIUM CHLOR-PWD.	-----	100# BAG	SODIUM CHROMATE	-----	100# BAG
CARBONOX	12.41	50# BAG	SOLTEX	47.71	50# BAG
CAUSTIC SODA	25.97	50# BAG	STABILITE	85.39	50# CAN
CC-16	19.07	50# BAG	SUPER VISBESTOS	-----	50# BAG
CON DET	41.48	5GAL CAN	TANNEX	30.98	50# BAG
CYPAN	94.76	50# BAG	TORQ-TRIM	547.41	55GAL DR
DESCO	38.42	25# BAG	WL-100	94.92	50# BAG
FLOSAL (Jaquays Asbestos)	20.48	50# BAG	XC-POLYMER	335.69	50# BAG
GYPSUM	8.84	100# BAG	X-TEND	18.35	2# CAN
K-FLO	638.04	55GAL DR	QUICK FOAM	51.75	5GAL CAN
Drilfoam (5gal.)	32.00				

OIL MUD MATERIALS

DURATONE (H.T.)	61.18	50# BAG	GELTONE	48.28	50# BAG
E Z MUL	549.54	55GAL DR	INVERMUL	33.79	50# BAG
E Z SPOT	580.51	55GAL DR	PETROTONE	53.00	50# BAG

TERMS: Net 30 days. Prices subject to change without notice. TAXES: All applicable taxes will be added to above prices. PC-113

MATERIALS RETURNED FOR CREDIT WILL BE SUBJECT TO RESTOCKING CHARGE

Baroid
Petroleum Services

Baroid Petroleum Services Division/NL Industries, Inc.
P.O. Box 1675, Houston, Texas 77001 Tel. (713) 527-1100

MAIL REMITTANCES TO:
PO BOX 2871
HOUSTON, TEXAS 77001
(PLEASE QUOTE OUR INVOICE NUMBER(S))

SOLD TO:
E J LONGYEAR COMPANY
308 EAST PIMA ST
PHOENIX ARIZ 85004

SHIPPED TO:
SAME

INVOICE DATE: MAY 31,1977

INVOICE NO.: 05 15409

CUSTOMER ORDER NO.	DOCUMENT NO.	DATE SHIPPED
NOR	DT 623229	04/14/77

DIST. ST.	CUSTOMER CODE	WELL CODE	PAGE
0812 02	5381005		1

FROM: PHOENIX
F.O.B. PHOENIX
VIA CUSTOMER PU
TERMS: NET 30 DAYS

QUANTITY	DESCRIPTION	UNIT PRICE	PER	AMOUNT
2	CAL SEAL 100# BAG	21 160	BAG	42 32
42 32	1% SURCHARGE-MUD PRODS	1 000	%	42
	ARIZONA SALES TAX	4 000	%	1 71
	PHOENIX SALES TAX	1 000	%	43
	MATERIAL DELIVERED 5-20-77			
	Bowie Ro #1			

seller represents and warrants that all of the goods or materials herein specified and/or the performance of the services covered by invoice have been produced and/or furnished in full compliance with the Federal Fair Labor Standards Act of 1938, as amended.

ADDRESS ALL CORRESPONDENCE REGARDING THIS INVOICE TO
P. O. BOX 1675, HOUSTON, TEXAS 77001

2

TOTAL → $ 44 88

True Value

42236

BOWIE LUMBER COMPANY

P. O. Box 128 — Bowie, Ariz. 85605 — Phone 847-2575

SASH, DOOR, ROOFING, PAINT, CEMENT, PLASTER,
HARDWARE, PIPE STEEL
CUSTOM EXCAVATING & TRANSIT MIX

Date 6-2-77 19

Sold to Longyear Co.

Deliver to 300 East Dialst. Phx Az 85004

Mail Address

Ordered

Pieces	Size	Lgth.	Description	Total Ft.	Price	Amount	
10	Bags		Cement		1.39	13	90
				+		1	74
				1		15	64
			Pulls-Lane				
			Called R.				

Delivered by

Received by

Automatic Business Products Co., Willimantic, Connecticut 06226 433713-B

O'MALLEYS

Building With Arizona Since 1908

1402 S. CENTRAL AVE. - PHOENIX, ARIZONA 85004
PHONE 258-8251

40 138 63

DATE 5-20-77

JOB NO.

SALESMAN 7

LONGYEAR E J CO
308 E PIMA
PHOENIX ARIZ 85004

2

CUST. P.O. NO.

DELIVERY ADDRESS

QUANTY	UNIT	DESCRIPTION	FOOTAGE	TOTAL FEET	PRICE	NET AMOUNT
20		Bags - Portland Cement		20	410	82 00

LOADED BY:

CHECKED BY:

DELIVERED BY:

Undersigned agrees that payment for materials received is due on or before the 10th day of the month following delivery and that if these terms are not fulfilled and account has to be turned over to the hands of an attorney or collection agency for collection we will pay in addition to the amount of our reasonable account an attorney and/or collection agency fees and costs — 1½% MONTHLY FINANCE CHARGE WHICH IS AN ANNUAL PERCENTAGE RATE OF 18% WILL BE APPLIED ON THE FIRST $1,500 AND 1% PER MONTH (12%) ON ANY EXCESS OVER $1500 ON PAST DUE BALANCES.

A 10% charge in cover handling will be applied to goods returned. Damaged merchandise or goods made up to order are not returnable.

Materials received in good condition and in quantities stated above

RECEIVED BY

Sub Total	82 00
Sales Tax	4 10
Delivery Charges	
TOTAL	86 10

THANK YOU

10 bags - May
10 bags - June

HOLE NO. 10-12-29-1

PROP. NO. 2579

DATE 6/2/77

SHEET 1 OF 3

INTERVAL	CONGLOMERATE	SANDSTONE	SILTSTONE	SHALE	MUDSTONE, CLAY	LIGHT	DARK	WHITE	GRAY	TAN	YELLOW	PINK	ORANGE	BROWN	RED	BLUE	GREEN	BLUE-GREEN	YELLOW-BROWN	RED-BROWN	PURPLE	BLACK	COURSE-GRAINED	MEDIUM-GRAINED	FINE-GRAINED	ANGULAR	SUB-ANGULAR	SUB-ROUNDED	ROUNDED	ABUNDANT	SPARSE	FRESH	PYRITE, MASSIVE	PYRITE, XTLS.	TARNISH, ETCHED	MAGNETITE	CARBON	ARKOSIC	QUARTZOSE	TUFF, TUFFACEOUS	INTERBEDDED	ALTERED	LIMONITIC	HEMATITIC	REDUCED	OXIDIZED
0 TO 10	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
10 TO 90	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
90 TO 160	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
160 TO 360	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
360 TO 370	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
370 TO 400	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
400 TO 460	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
460 TO 500	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
500 TO 580	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
580 TO 910	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
910 TO 1020	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
1020 TO 1070	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX

HOLE NO. 10-12-29-1

PROP. NO. 2578

DATE 6/5/77

SHEET 2 OF 3

INTERVAL	CONGLOMERATE	SANDSTONE	SILTSTONE	SHALE	MUDSTONE, CLAY	LIGHT	DARK	WHITE	GRAY	TAN	YELLOW	PINK	ORANGE	BROWN	RED	BLUE	GREEN	BLUE-GREEN	YELLOW-BROWN	RED-BROWN	PURPLE	BLACK	COURSE-GRAINED	MEDIUM-GRAINED	FINE-GRAINED	ANGULAR	SUB-ANGULAR	SUB-ROUNDED	ROUNDED	ABUNDANT	SPARSE	FRESH	PYRITE, MASSIVE	PYRITE, XTLS.	TARNISH, ETCHED	MAGNETITE	CARBON	ARKOSIC	QUARTZOSE	TUFF, TUFFACEOUS	INTERBEDDED	ALTERED	LIMONITIC	HEMATITIC	REDUCED	OXIDIZED
1030 TO 1080	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
1080 TO 1200	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
1200 TO 1210	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
1210 TO 1330	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
1330 TO 1340	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
1340 TO 1400	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
1400 TO 1430	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
1430 TO 1440	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
1440 TO 1490	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
1490 TO 1530	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
1530 TO 1560	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
1560 TO 1630	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX

SHEET 3 OF 3

HOLE NO. 10-12-29-1

PROP. NO. 2578

DATE 6/5/77

INTERVAL	CONGLOMERATE	SANDSTONE	SILTSTONE	SHALE	MUDSTONE, CLAY	LIGHT	DARK	WHITE	GRAY	TAN	YELLOW	PINK	ORANGE	BROWN	RED	BLUE	GREEN	BLUE-GREEN	YELLOW-BROWN	RED-BROWN	PURPLE	BLACK	COURSE-GRAINED	MEDIUM-GRAINED	FINE-GRAINED	ANGULAR	SUB-ANGULAR	SUB-ROUNDED	ROUNDED	ABUNDANT	SPARSE	FRESH	PYRITE, MASSIVE	PYRITE, XTLS.	TARNISH, ETCHED	MAGNETITE	CARBON	ARKOSIC	QUARTZOSE	TUFF, TUFFACEOUS	INTERBEDDED	ALTERED	LIMONITIC	HEMATITIC	REDUCED	OXIDIZED
1630 TO 1740	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
1740 TO 1740	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
1740 TO 1830	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
1830 TO 1850	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
___ TO ___	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
1830 TO 1930	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
1930 TO 2000	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
___ TO ___	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
___ TO ___	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
___ TO ___	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
___ TO ___	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX

HOLE NO. 2-12-29-1

PROP. NO. 2576

DATE _____

SHEET 1 OF 4

INTERVAL	CONGLOMERATE	SANDSTONE	SILTSTONE	SHALE	MUDSTONE, CLAY	LIGHT	DARK	WHITE	GRAY	TAN	YELLOW	PINK	ORANGE	BROWN	RED	BLUE	GREEN	BLUE-GREEN	YELLOW-BROWN	RED-BROWN	PURPLE	BLACK	COURSE-GRAINED	MEDIUM-GRAINED	FINE-GRAINED	ANGULAR	SUB-ANGULAR	SUB-ROUNDED	ROUNDED	ABUNDANT	SPARSE	FRESH	PYRITE, MASSIVE	PYRITE, XTLS.	TARNISH, ETCHED	MAGNETITE	CARBON	ARKOSIC	QUARTZOSE	TUFF, TUFFACEOUS	INTERBEDDED	ALTERED	LIMONITIC	HEMATITIC	REDUCED	OXIDIZED
0 TO 25	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
25 TO 50	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	very slight LI	HE	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
50 TO 70	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
55' change Air to Water 70 TO 105	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
105 TO 110	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF matrix	IB	AL	LI slight	HE	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
110 TO 210	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
210 TO 310	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
310 TO 390	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
390 TO 400	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
400 TO 405	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
405 TO 460	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
460 TO 510	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX

HOLE NO. 2-12-29-1

PROP. NO. 2576

DATE _____

SHEET 2 OF 4

INTERVAL	CONGLOMERATE	SANDSTONE	SILTSTONE	SHALE	MUDSTONE, CLAY	LIGHT	DARK	WHITE	GRAY	TAN	YELLOW	PINK	ORANGE	BROWN	RED	BLUE	GREEN	BLUE-GREEN	YELLOW-BROWN	RED-BROWN	PURPLE	BLACK	COURSE-GRAINED	MEDIUM-GRAINED	FINE-GRAINED	ANGULAR	SUB-ANGULAR	SUB-ROUNDED	ROUNDED	ABUNDANT	SPARSE	FRESH	PYRITE, MASSIVE	PYRITE, XTLS.	TARNISH, ETCHED	MAGNETITE	CARBON	ARKOSIC	QUARTZOSE	TUFF, TUFFACEOUS	INTERBEDDED	ALTERED	LIMONITIC	HEMATITIC	REDUCED	OXIDIZED
510 TO 580	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
580 TO 640	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
640 TO 740	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
740 TO 770	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
770 TO 780	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
780 TO 850	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
850 TO 870	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
870 TO 930	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
930 TO 940	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
940 TO 1000	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
1000 TO 1020	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
1020 TO 1060	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX

HOLE NO. 2-12-20-1

PROP. NO. 2576

DATE _____

SHEET 3 OF 4

INTERVAL	CONGLOMERATE	SANDSTONE	SILTSTONE	SHALE	MUDSTONE, CLAY	LIGHT	DARK	WHITE	GRAY	TAN	YELLOW	PINK	ORANGE	BROWN	RED	BLUE	GREEN	BLUE-GREEN	YELLOW-BROWN	RED-BROWN	PURPLE	BLACK	COURSE-GRAINED	MEDIUM-GRAINED	FINE-GRAINED	ANGULAR	SUB-ANGULAR	SUB-ROUNDED	ROUNDED	ABUNDANT	SPARSE	FRESH	PYRITE, MASSIVE	PYRITE, XTLS.	TARNISH, ETCHED	MAGNETITE	CARBON	ARKOSIC	QUARTZOSE	TUFF, TUFFACEOUS	INTERBEDDED	ALTERED	LIMONITIC	HEMATITIC	REDUCED	OXIDIZED
1060 TO 1190	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
1190 TO 1200	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
1200 TO 1230	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
1230 TO 1250	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
1250 TO 1260	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
1260 TO 1350	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
1350 TO 1400	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
1400 TO 1520	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
1520 TO 1560	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
1560 TO 1600	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
1600 TO 1640	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
1640 - 1700	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
1700 TO 1800	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX

SHEET 4 OF 4

HOLE NO. 2-12-29-1

PROP. NO. 2576

DATE _____

INTERVAL	CONGLOMERATE	SANDSTONE	SILTSTONE	SHALE	MUDSTONE, CLAY	LIGHT	DARK	WHITE	GRAY	TAN	YELLOW	PINK	ORANGE	BROWN	RED	BLUE	GREEN	BLUE-GREEN	YELLOW-BROWN	RED-BROWN	PURPLE	BLACK	COURSE-GRAINED	MEDIUM-GRAINED	FINE-GRAINED	ANGULAR	SUB-ANGULAR	SUB-ROUNDED	ROUNDED	ABUNDANT	SPARSE	FRESH	PYRITE, MASSIVE	PYRITE, XTLS.	TARNISH, ETCHED	MAGNETITE	CARBON	ARKOSIC	QUARTZOSE	TUFF, TUFFACEOUS	INTERBEDDED	ALTERED	LIMONITIC	HEMATITIC	REDUCED	OXIDIZED
1800 TO 1820	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
1820 TO 1910	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
1910 TO 1907	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
____ TO ____	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
____ TO ____	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
____ TO ____	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
____ TO ____	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
____ TO ____	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
____ TO ____	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX

HOLE NO. 2-12-29-1

PROP. NO. 2576

DATE _____

SHEET 1 OF _____

Heavy minerals

INTERVAL	CONGLOMERATE	SANDSTONE	SILTSTONE	SHALE	MUDSTONE, CLAY	LIGHT	DARK	WHITE	GRAY	TAN	YELLOW	PINK	ORANGE	BROWN	RED	BLUE	GREEN	BLUE-GREEN	YELLOW-BROWN	RED-BROWN	PURPLE	BLACK	COURSE-GRAINED	MEDIUM-GRAINED	FINE-GRAINED	ANGULAR	SUB-ANGULAR	SUB-ROUNDED	ROUNDED	ABUNDANT	SPARSE	FRESH	PYRITE, MASSIVE	PYRITE, XTLS.	TARNISH, ETCHED	MAGNETITE	CARBON	ARKOSIC	QUARTZOSE	TUFF, TUFFACEOUS	INTERBEDDED	ALTERED	LIMONITIC	HEMATITIC	REDUCED	OXIDIZED
1100 TO 1130	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE (slight)	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
1130 TO 1190 (decreasing pyrite)	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP (clusters small)	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
1190 TO 1240 (↑ pyr)	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP (↑clusters)	TE	MG (↓)	C	AK	QT	TF	IB	AL	LI	HE (↑)	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
1240 TO 1300	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP (clusters + ↑ # lg. xtals)	TE	MG	C	AK	QT	TF	IB	AL	LI	HE (↓)	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
1300 TO 1400	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP (↑ clusters abundant)	TE	MG	C	AK	QT	TF	IB	AL	LI	HE (single)	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
1400 TO 1450	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP (clusters + lg xtals)	TE	MG	C	AK	QT	TF	IB	AL	LI	HE (scattered)	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
1450 TO 1500	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP (scattered)	FR	MP	XP (clusters)	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
1500 TO 1540	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP (clusters)	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
1540 TO 1600	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP (clusters)	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
____ TO ____	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
____ TO ____	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
____ TO ____	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX
	CO	SS	ST	SH	MS	L	D	WH	GY	TN	YW	PK	OR	BN	RD	BL	GN	BG	YB	RB	PP	BK	CG	MG	FG	AN	SA	SR	R	AB	SP	FR	MP	XP	TE	MG	C	AK	QT	TF	IB	AL	LI	HE	RE	OX