

Bethlehem Steel Corp. Co-ordinates
Well No. 5
S 29119.52 E 1238.27

CO: 039 PMT: 3860
Loc Digitized from OGIS 7.5' Mylar
QUAD: 325 DATE: 9-FEB-90
LAT: 38 00.0 Miles South: 1.40
LONG: 81 25.0 Miles West : 1.77

FILE NO. _____
DRAWING NO. _____
SCALE 1" = 2000'
MINIMUM DEGREE OF ACCURACY 1 in 6140
PROVEN SOURCE OF ELEVATION USC & GS BM on Kayford Mountain Elev 2402

I THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF MINES.
(SIGNED) Forrest Burkett
P.P.E. 1442 L.L.S. _____

PLACE SEAL HERE

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS
FORM IV-6 (8-78)



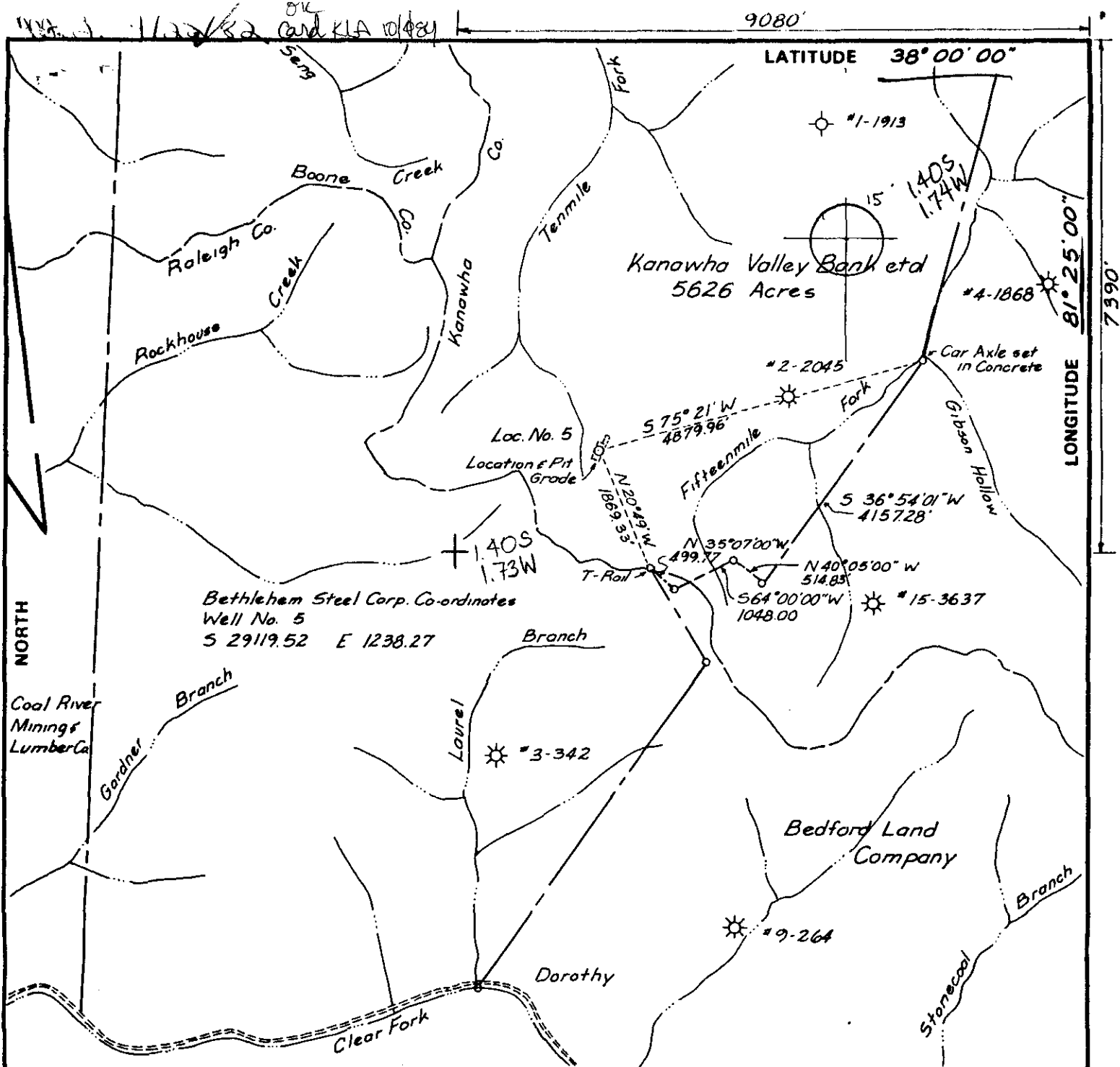
DATE April 20, 1982
OPERATOR'S WELL NO. #5 - Ser # 093271
API WELL NO. 47 - 039 - 3860
STATE COUNTY PERMIT

STATE OF WEST VIRGINIA
DEPARTMENT OF MINES
OIL AND GAS DIVISION

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
(IF "GAS,") PRODUCTION STORAGE DEEP SHALLOW
LOCATION: ELEVATION 2094.7 WATER SHED Tenmile Fork of Cabin Creek of Kanawha River
DISTRICT Cabin Creek COUNTY Kanawha
QUADRANGLE Dorothy Eccles NW
SURFACE OWNER Kanawha Valley Bank et al ACREAGE 5500+
OIL & GAS ROYALTY OWNER Kanawha Valley Bank et al LEASE ACREAGE 5626
LEASE NO. 10306
PROPOSED WORK: DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE PLUG OFF OLD FORMATION PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY) _____

PLUG AND ABANDON CLEAN OUT AND REPLUG
TARGET FORMATION Marcellus Shale ESTIMATED DEPTH 6759'
WELL OPERATOR Ashland Exploration, Inc. DESIGNATED AGENT Forrest Burkett
ADDRESS P.O. Box 391 Ashland Ky 41114 ADDRESS P.O. Box 156 Brenton W.Va. 24818
DEEP WELL

MAY 10 1982



FILE NO. _____
 DRAWING NO. _____
 SCALE 1" = 2000'
 MINIMUM DEGREE OF ACCURACY 1 in 6140
 PROVEN SOURCE OF ELEVATION USC&GS BM on Kayford Mountain Elev 2402

I THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF MINES.
 (SIGNED) John H. Burnett
 R.E. 1442 L.L.S. _____

PLACE SEAL HERE

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS
 FORM IV-6 (8-78)

WELL TYPE: OIL ___ GAS X LIQUID INJECTION ___ WASTE DISPOSAL ___
 (IF "GAS,") PRODUCTION X STORAGE ___ DEEP X SHALLOW ___

LOCATION: ELEVATION 2094.7 WATER SHED Tenmile Fork of Cabin Creek of Kanawha River
 DISTRICT Cabin Creek COUNTY Kanawha
 QUADRANGLE Dorothy 15: 9001es NW 15'

SURFACE OWNER Kanawha Valley Bank etd ACREAGE 5500+
 OIL & GAS ROYALTY OWNER Kanawha Valley Bank etd LEASE ACREAGE 5626
 LEASE NO. 10306

PROPOSED WORK: DRILL X CONVERT ___ DRILL DEEPER ___ REDRILL ___ FRACTURE OR STIMULATE X PLUG OFF OLD FORMATION ___ PERFORATE NEW FORMATION ___ OTHER PHYSICAL CHANGE IN WELL (SPECIFY) _____

PLUG AND ABANDON ___ CLEAN OUT AND REPLUG ___
 TARGET FORMATION Marcellus Shale ESTIMATED DEPTH 6759'
 WELL OPERATOR Ashland Exploration, Inc. DESIGNATED AGENT Forrest Burkett
 ADDRESS P.O. Box 391 Ashland Ky 41114 ADDRESS P.O. Box 156 Brenton W.Va. 24818
DEEP WELL 6-6 Burnwell (262) 5/10/82

STATE OF WEST VIRGINIA
 DEPARTMENT OF MINES
 OIL AND GAS DIVISION

DATE April 20, 1982
 OPERATOR'S WELL NO. #5 - Ser # 093271
 API WELL NO. 47 - 039 - 3860
 STATE COUNTY PERMIT

(Revised 3-81)

PROPOSED WORK ORDER

THIS IS AN ESTIMATE ONLY:
ACTUAL INFORMATION MUST BE SUBMITTED ON FORM IV-35 UPON COMPLETION

DRILLING CONTRACTOR (IF KNOWN) Ray Resources Drilling Company

Address 630 Commerce Square

Charleston, WV 25301

GEOLOGICAL TARGET FORMATION Marcellus Shale

Estimated depth of completed well 6759 feet. Rotary X / Cable tools /
Approximate water strata depths: Fresh, feet; salt, Top of feet.
Approximate coal seam depths: 665' coal seam Salt Sand
Is coal being mined in this area: Yes / No X /

CASING AND TUBING PROGRAM

CASING OR TUBING TYPE	SPECIFICATIONS					FOOTAGE INTERVALS		CEMENT FILL- UP OR SACKS Cubic ft.	PACKERS
	Size	Grade	Weight per ft	New	Used	For Drill- ling	Left in Well		
Conductor	13 3/8	H40	48.00	X		40'	40'	25 sks	Kinds
Fresh water:									
Coal									Sizes
Intermed.	8 5/8	K55	24.00	X		2274	2274	Circ. to surface	
Production	4 1/2	K55	10.50	X		6759	6759	As Needed	Depths set
Tubing									
Liners									Perforations:
									Top Bottom

NOTE: Regulation 7.02 of the Department of Mines provides that the original and four copies of Form IV-2 must be filed with the Department, accompanied by (i) a plat in the form prescribed by Regulation 11, (ii) a bond in one of the forms prescribed by Regulation 12, or in lieu thereof the other security allowed by Code §22-4-2, (iii) Form IV-9, "Reclamation Plan" applicable to the reclamation required by Code §22-4-12b and Regulation 23, (iv) unless previously paid on the same well, the fee required by Code §22-4-12a, and (v) if applicable, the consent required by Code §22-4-8a from the owner of any water well or drilling within 200 feet of the proposed well.

A separate Form IV-2 shall not be required for fracturing or stimulating a well where fracturing or stimulating is to be part of the work for which a permit is sought and is noted as such on the Form IV-2 filed in connection therewith.

THIS PERMIT MUST BE POSTED AT THE WELL SITE.

ALL PROVISIONS BEING IN ACCORDANCE WITH CHAPTER 22,

ARTICLE 4 OF THE W. VA. CODE, THE LOCATION IS HEREBY

APPROVED FOR drilling. THIS PERMIT SHALL EXPIRE

IF OPERATIONS HAVE NOT COMMENCED BY 1-5-83

BY [Signature]

The following waiver must be completed by the coal operator and by any coal owner or coal lessee who has recorded a declaration under Code §22-4-20, if the permit is to be issued within fifteen (15) days of receipt thereof:

W A I V E R

The undersigned coal operator / owner / lessee / of the coal under this well location has examined this proposed well location. If a mine map exists which covers the area of the well location, the well location has been added to the mine map. The undersigned has no objection to the work proposed to be done at this location, provided the well operator has complied with all applicable requirements of the West Virginia Code and the governing regulations.

Date: , 19 .

By:

Its:

Shirestreet

DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC.

1st Stage - Perf Devonian Shale 39H/6278-6636, Waterfrac w/20#/1000 gal gel system, ATP 2181, 38 B/M ATP, MTP 3600#, ISIP 3600#, 15 min 200#, 4,400# sand.

2nd Stage - Perf Devonian Shale 40H/5459-5808 - Foam frac w/1000 gal 28% HCl. BD @ 1000#, ATP 3200#, SI @ 1600#, 15 min 1400#, ATR @ 40 B/M - TSLF 176 bbl, TL&FW 221 bbl. (75 Quality foam.)

3rd Stage - Perf Gordon 16H/4093-4106 - Foam frac w/75 Quality foam, 500 gal 15% HCl acid, 30,000# 20/50 sand, 182 MCFN₂, ATP 1200# @ 20 B/M. BD @ 1100#, ISIP 700#, 15 min 600#. TL&FW 155 bbl., TSLF 104 bbl.

4th Stage - Perf Middle Weir 16H/3507-3520-Foam frac w/75 Quality foam, 30,000# 20/50 sand, 276 MCFN₂, ATR 20 B/M, BD @ 1000#, ATP 1350#, ISIP 1100#, 15 min 900#. TL&FW 153 bbl., TSLF 104 bbl.

Completed as dual gas producer w/total initial potential @ 1086 MCF/D. Gordon & Devonian Shale (297 MCF/D) and M. Weir (789 MCF/D)

WELL LOG

FORMATION	COLOR	HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS Including indication of all fres and salt water, coal, oil and ga
Sand			0	202	
Shale & Sand			202	523	
Shale			523	690	
Sand			690	850	Gas test @ 3654' no show
Shale			850	892	3904' - 419 MCF/D
Sand & Shale			892	1140	4155' - 375 MCF/D
Shale			1140	1280	4651' - 554 MCF/D
Sand			1280	1328	5129' - 547 MCF/D
Shale			1328	1378	5649' - 325 MCF/D
Sand			1378	1633	6150' - 430 MCF/D
Shale			1633	1730	6650' - 430 MCF/D
Salt Sand			1730	2280	TD - 325 MCF/D
Shale			2280	2360	
Ravencliff			2360	2409	
Shale			2409	2416	
Avis Limestone			2416	2443	
Shale			2443	2524	
Upper Maxton			2524	2589	
Shale			2589	2632	
Middle Maxton			2632	2677	
Shale			2677	2908	
Lower Maxton			2908	2932	
Shale			2932	2970	
Little Lime			2970	3054	
Pencil Cave			3054	3062	
Big Lime			3062	3375	
Shale			3375	3475	
Middle Weir			3475	3555	
Shale			3555	3559	
Lower Weir			3559	3623	
Shale			3623	3856	
Coffee Shale			3856	3876	
Berea			3876	3918	
Devonian Shale			3918	4091	
Gordon			4091	4107	
Devonian Shale			4107	6812	
Opondaga Ls.			6812	6852*	

5459
3918

1541

*LTD 6852'
DTD 6820'

(Attach separate sheets as necessary)

ASHLAND EXPLORATION, INC.

Well Operator

By: *Daniel J. Belcher*

Date: October 12, 1982

Note: Regulation 2.02(i) provides as follows:
"The term 'log' or 'well log' shall mean a systematic detailed geological record of all formations, including coal, encountered in the drilling of a well."